

# AUTOMOTIVE INDUSTRIES

Vol. 55  
Number 2

PUBLISHED WEEKLY AT CHESTNUT AND 56TH STREETS  
PHILADELPHIA, JULY 8, 1926

35c a copy  
\$3.00 a year

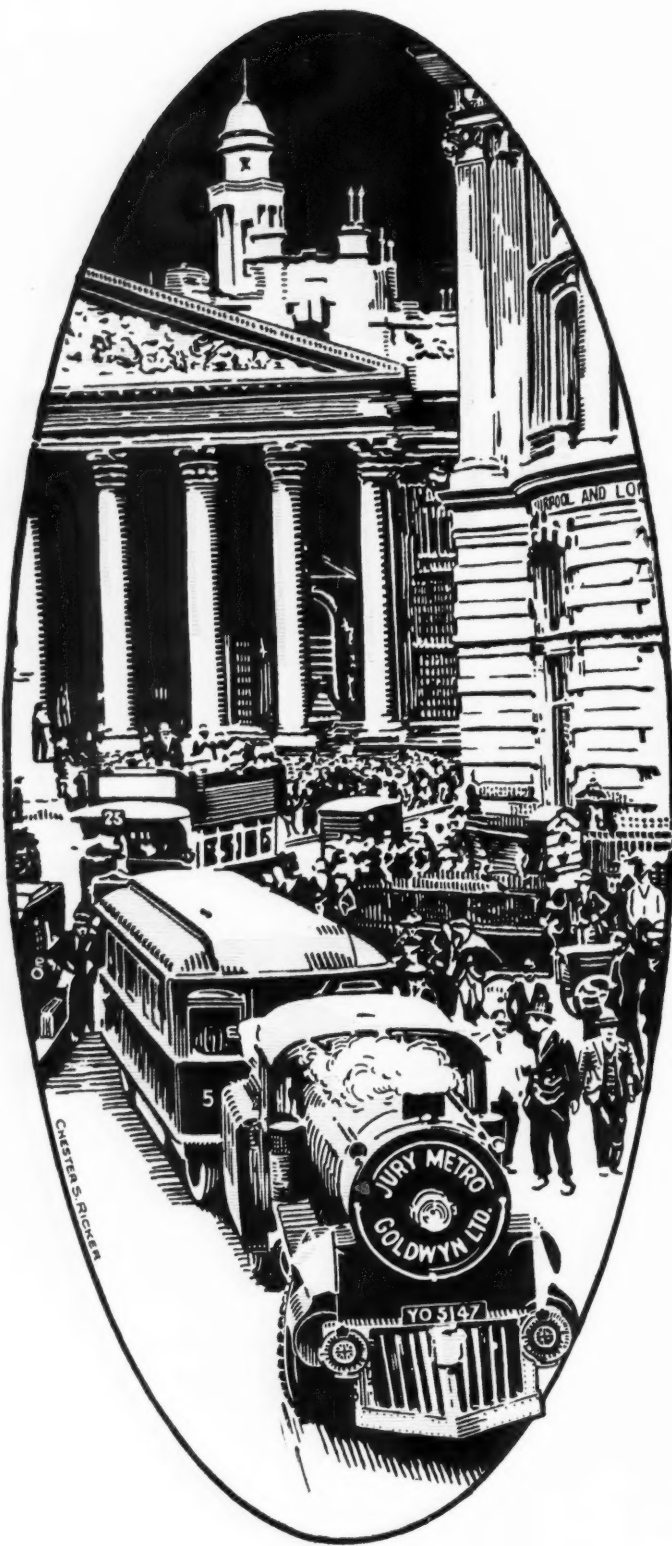
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## In the Heart of London

That's where Threadneedle and Cornhill meet at the "Bank." Here, before the Royal Exchange, you see the Waukesha Motored Trackless Train which traversed the whole United States last year and just started on its European tour in June. Pulling a 16000 - pound Pullman trailer and hauling a total load of 24000 pounds on a rigid schedule all last year was a severe task. It is adequate proof of the Bus and Truck engine stamina built into all Waukesha "Ricardo Head" engines.

*Waukesha four and six cylinder engines are built in sizes from 20 to 125 horse power. Send for the "Ricardo Head" Booklet explaining how more power, less gasoline consumption, and the elimination of "ping" are obtained.*

AUTOMOTIVE EQUIPMENT DIVISION

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*Eastern Sales Office*

*Aeolian Building, 33 W. 42nd Street*

*New York City*

*Builders of Heavy Duty Engines for Over Twenty Years*

# AUTOMOTIVE INDUSTRIES

VOLUME 55

Philadelphia, Thursday, July 8, 1926

NUMBER 2

## Exports for Next Six Months Likely to Continue Ahead of 1925

Foreign car and truck sales during first five months of 1926  
17 per cent greater than last year. Trucks alone  
register increase of 57 per cent.

By Norman G. Shidle

PASSENGER car and truck exports have been good during the first half of 1926 and it is generally believed that the last six will prove to be better than the last half of 1925, but the increases in export shipments this year have not exceeded those of 1925 by such wide margins as 1925 went ahead of 1924.

Conditions in the export field have been spotty during the first six months, with unfavorable selling conditions holding up sales in some areas and lack of sufficient merchandising effort on the part of some organizations being responsible for the spottiness in others.

The unusually large gains made in truck shipments overseas are an outstanding feature of the export totals for the first five months of this year. During this period American manufacturers shipped from United States and Canada a total of 40,905 commercial vehicles as against only 26,155 in the first five months of 1925, thus showing a gain of nearly 57 per cent.

Passenger car shipments for this period were 135,443, as against 124,492, a gain of only 8 per cent over last year's total. Part of the relatively low increase in car shipments from United States and Canada, however, possibly may be attributed to the increased number of foreign assembly plants

which are being opened by American producers. Ford has increased his foreign assemblies in the last 12 months, while General Motors foreign assembly plants have increased to a total of twelve. The G.M.C. units are located at London, Copenhagen, Antwerp, Buenos Aires, Sao Paulo, Malaga, Bilbao, Hamburg, Le Havre, Port Elizabeth and Wellington. It is understood that General Motors is about to open six plants in Australia with headquarters at Sydney and that the new units probably will be in operation by the first of January, 1927. Chrysler

is soon to open a plant at Antwerp, although this has no effect on the total exports quoted since the plant was not operating during the period covered by the figures.

Truck shipments increased in value by almost the same percentage as in number, but passenger car exports for the first five months of this year, while going ahead of the same period in 1925 by 8 per cent in number, advanced in value by a little less than 4 per cent.

Combining the totals, however, it appears that motor vehicle exports from United States and Canada for the first five months were 176,348 this year as compared to 150,647 last year, an increase of about 17 per cent. Value of the export shipments during the same periods were

TABLE 1  
Comparative Exports of Passenger Cars—First Five Months  
1925 and 1926

	Units		Value	
	1925	1926	1925	1926
U. S. Cars .....	100,864	111,076	\$78,511,862	\$81,405,348
Canadian Cars .....	23,628	24,367	10,742,214	11,396,686
Total .....	124,492	135,443	\$89,254,076	\$92,802,034
		Increase		Increase
		8.8%		4.0%

TABLE 2  
Comparative Exports of Trucks—First Five Months 1925  
and 1926

	Units		Value	
	1925	1926	1925	1926
U. S. Trucks .....	20,253	31,122	\$13,480,922	\$21,006,898
Canadian Trucks .....	5,902	9,783	1,891,779	3,302,751
Total .....	26,155	40,905	\$15,372,701	\$24,309,649
		Increase		Increase
		56.4%		58.2%

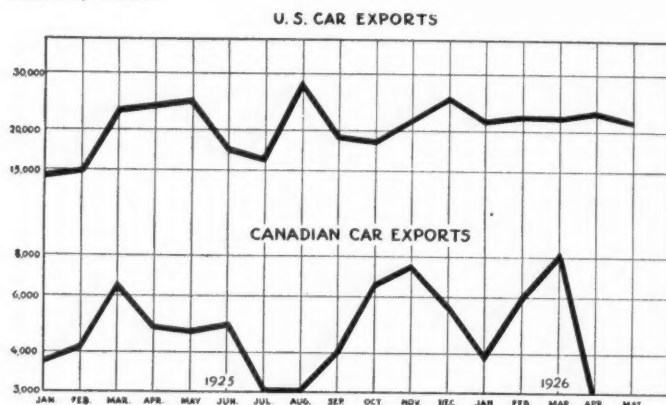
TABLE 3  
Comparative Exports Total Vehicles—First Five Months  
1925 and 1926

	Units		Value	
	1925	1926	1925	1926
U. S. Vehicles .....	121,117	142,198	\$91,992,784	\$102,412,246
Canadian Vehicles .....	29,530	34,150	12,633,993	14,699,437
Total .....	150,647	176,348	\$104,626,777	\$117,111,683
		Increase		Increase
		17.0%		11.9%



\$117,111,683 in 1926 and \$104,626,777 in 1925, a gain of nearly 12 per cent.

The effect of the foreign assemblies on the export figures is indicated by the fact that the American cars assembled abroad totalled 92,241 for the first five months of 1926 as compared with 74,555 for the same period in 1925. Every month this year has run well ahead of last so far as these foreign assemblies are concerned, the March total in 1926 being practically double that of March, 1925.



Accompanying tables show how this year in exports has compared with last from month to month. Total motor vehicle shipments from the United States were larger this year than last in three of the months from January to June inclusive, and smaller in two cases, March and May. Canadian shipments up to June 1 this year also were larger than last year in three of the months and smaller in two, but the two lower months for Canadian exports were January and April.

Talking to automotive export men these days one often gets from them what superficially seem like contradictory statements. "Business is bad here and not so good there," they will tell you. "Labor troubles are influencing the market unfavorably in this place and poor crops or political difficulties make conditions uncertain in that. Yes, we believe that there will be quite good business during the last six months, despite the spottiness of the first six."

#### One Executive's Explanation

One big export executive who talked along these lines, explained the logic of the apparently contradictory statements something like this:

"It is true that we have unfavorable economic conditions in a number of overseas markets at the present time—not all of them, but in some important areas. But we must remember that the foreign automobile market, taken as a whole, is right in the midst of its development period. Whatever economic disturbances may appear on the surface, the market fundamentally is in its period of rapid growth just as was the United States market fifteen years ago. The basic force of that normal growth may be expected to have a sufficiently strong influence on overseas sales in general to offset or more than offset the resistance set up by temporarily unfavorable conditions in particular countries."

And it is with something of this same confidence that a good many export men are looking forward to the last six months of 1926. It is realized by most automotive executives today that their foreign business from now on must be procured through sound, consistent and intelligent merchandising methods just as their domestic successes have been built. Competition of foreign makers has to be met, as well as that of rival domestic producers. But fundamentally there seems to be every reason to look to the next few months with sane optimism.

Speaking of the general problems which confront the automotive exporter as he turns the corner into the last half of 1926, George E. Quisenberry, editor, *The American Automobile* (Overseas Edition) and *El Automovil Americano*, writes as follows:

"The course of the export business is probably more interesting today than it has been for a good long time. This is attested by numerous developments affecting practically every automotive line sold abroad—from the complete vehicle down to the smallest accessory, replacement part or garage equipment item.

"All lines have not gone ahead at the same rate of increase; in fact, certain leaders in the American market might be mentioned that have this year fallen below their last year's record in the export field. Any analysis of these changes will almost without exception lead to the trail of merchandising policies and distributor-dealer connections. In this the export is similar to the domestic sales problem.

#### Other Similarities

"There are other similarities between the domestic and export markets. First of all, a few months ago there was some doubt as to the actual business that would be done during the last six months. This fear has now passed, just as doubts of the last half have been cleared away from before the domestic sales manager. The export manager knows now that there will be demand and volume demand for his products during the months to come.

"Other developments have been important. Finance facilities are more numerous, promising to be of much assistance in expediting sales. Steps have been taken to overcome some of the more difficult shipping problems. Knowledge of individual markets and merchandising has become more widespread and this has had its effect. Appearance of the light type car in American production promises to uncover business hitherto denied and increased road building in territory after territory is having a remarkable effect.

"Such developments might be described at length. The promise of the export business has never been higher and certainly there has never been a time in our overseas trade when sound, honest merchandising would repay the manufacturer so bountifully."

Talk about American-built light cars has been one of the outstanding features of speculation about future export possibilities recently. While an Americanized version of the European light car already has been announced by an American producer in the Overland "Whippet," and while several other makers apparently are contemplating production of cars of similar type in the near future, it seems unlikely that a car with narrow tread, low powered engine, and less than 100 in. wheelbase will be brought out in this country just now. Any development of this kind by an American producer seems more likely to be handled in conjunction with some foreign connection than as a strictly American-built product.

There has been so much assured talk about the necessity for light car production by American makers if they are to continue to expand their export markets, that it is pertinent to look a little more closely at some recent European developments in car design and to study their relationship to American design trends as they relate to the export market. From one point of view, the job that the other fellow is doing always looks better than our own. While American builders are being strongly urged by certain of their fellows to emulate foreign small car design in order to meet foreign competition in export markets, some foreign manufacturers apparently are preparing to copy various phases of American design on the theory that our high-powered, rugged cars are best suited for export trade.



Evidence of this trend is given in a report just received from W. F. Bradley, our European correspondent, who writes:

"An exceptional revival of interest in the six-cylinder engine will be a feature of the next Paris automobile show, during October. Under the influence of American competition, European makers apparently feel that they have to provide a greater degree of flexibility and better top gear performances than they have given in the past.

"The new sixes will not all be the costly high-grade models European firms have built in the past. Renault is laying plans for the production of a cheap light six, according to reports, while the Citroen program for 1927 also includes a quantity produced "six" of about 91 cu. in. piston displacement. The French Talbot Co. (formerly Darracq) is already on the market with a medium sized six designed specially to meet Buick and other American competition. It is believed that this firm, which has had unusual success with a light four of 91 cu. in. displacement, will replace this model by a six of the same size. Voisin already has produced a six in keeping with the present tendency.

"It is believed that Fiat policy will be toward sixes for all but the smallest types. The 509 four-cylinder model of 60 cu. in., which was only put into production this year, and is now approaching 200 per day, will undergo no changes but the belief is that above this size six cylinders will be adopted. There seem to be no indications of the coming of the straight-eight in Europe."

While this does not indicate that there isn't a good market abroad for an American-built light car, it does emphasize the necessity for analyzing the whole situation carefully and of bewareing lest we fail to recognize fully and emphasize to the greatest possible extent the virtues of the merchandise which we already are producing. The type of vehicle which has been developed by the American industry is distinguished for its ruggedness, its high power, its relative ease of repair and its ability to negotiate bad roads and operate under unfavorable highway conditions.

### Our Cars Have Advantage

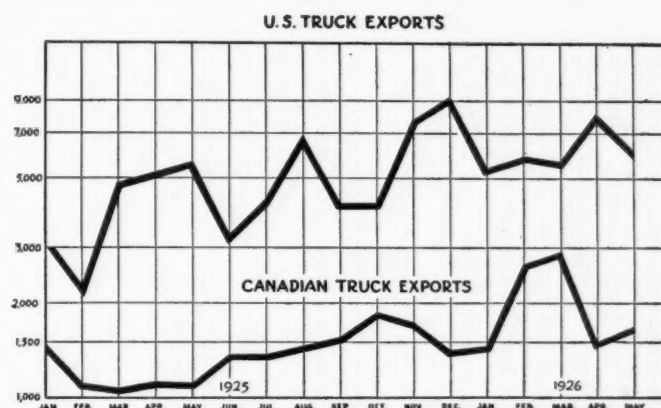
Despite the constantly increasing highway development in overseas markets, there still are many, many areas in which the characteristics possessed by the American vehicles are not only desirable but necessary. This point should not be lost sight of, however feasible small car development may turn out to be. While we have been talking light cars strongly, a member of the Queensland (Australia) House of Parliament, A. C. Elphinstone, has delivered himself as follows:

"I have for some years been astonished at the apathy and lack of enterprise of British exporters. To all appearances, and taking it in the mass, they do not seem to have considered the Australian trade worth bothering about, and patriotic Australians have perforce had to buy American goods simply because the Americans adapted their goods to our requirements.

"I happen to be interested in motors and motoring, and I should like to point out a few facts that all producers of British cars apparently are not aware of. Queensland is a wide spaced country . . . transport is a vital matter to us, especially road transport. It is essential that the transport medium must meet our road conditions, and many of the so-called roads are mere tracks. We would like British cars, but the British manufacturer does not give us what we want. The British car certainly has endurance, but that is not everything. What is necessary is a car of standard track and good clearance; at least eleven inches clearance is desirable, for cars often have to run in ruts made by cartwheels over a road which is a road

in name only. Then we want a good top speed and three forward speeds only, but the top gear must be of good ratio and the second speed of good climbing power. The electric system must be free from complication. I notice here that many motorists do not rely on their self-starters, which suggests that their battery system is none too good. In Queensland the American cars on which we have to rely have the battery system and it seldom fails us. Springing must be designed to stand up under rough conditions.

"And above all there must be adequate service. We do



not want to send to England for spare parts. . . . We don't think a great deal of appearance for our cars have to go through rough usage, but we do want machines which will take our bad roads and for which spare parts are soon obtained."

And so it goes. The manufacturer in studying his markets is constantly torn between the necessity for viewing his own product with a sufficiently harsh and critical eye and at the same time refraining from overvaluing the merits of the product of a foreign competitor.

That there is an excellent market awaiting American-built small cars of various types in a number of countries is almost certain, as has been proved by the investigations of many competent observers. But that there is and will continue to be an excellent export market for the larger American cars seems equally certain. South Africa, India and many other important export markets have operation requirements just as rigorous and as exacting as Australia.

Australia has continued to be the largest buyer of American automotive products this year. It bought a little over \$14,000,000 worth of cars from United States and Canada in the first five months of this year as compared with purchases of about \$16,000,000 during the same period in 1925.

In spite of the decline in Australia, however, other important markets showed material gains both in number and value of products imported from the United States and Canada during the first five months. Car sales to South Africa went up about 1000 over last year for the period mentioned, to British India a little more than 1000, to New Zealand slightly less than 1000, and to the Argentine over 3000.

The Argentine has bought many more trucks in the first five months this year than last, the 1926 total from U. S. and Canada amounting to 1471 as opposed to 368 for 1925. Australian truck purchases from us went from 4259 to 8352, while South African truck purchases were 747 in 1926 as against 491 for the period in 1925.

In taking a hasty glance at some of our more important export markets as a part of our speculations about overseas sales for the last half of 1926, it is pleasing to note that the latest reports from Australia are quite encouraging. A rather important strike, involving engine drivers and firemen, which began early in May was ended on June

21 and the restrictions on gas consumption in Sydney, which resulted from coal shortage, have been lifted. General conditions in the country are normal according to reports from the Department of Commerce representatives.

Other late reports of foreign conditions issued by the Bureau of Foreign and Domestic Commerce, many of them specially developed by the Automotive Division, indicate the present state of business from which the economic picture for the next few months is to be developed.

Business in the Argentine, one report indicates, was rather quiet around the middle of June, with a slightly increasing pessimism among business men. No marked changes in this condition were evident as the months closed. A slight trade improvement had come about in April, but May recorded a set-back. Early in June automobile stocks in the Argentine were said to be very heavy, and a consequent decline in imports for a number of weeks was expected.

#### Sales Drop in Brazil

After breaking all records in the first quarter of this year, automobile sales in Brazil fell off somewhat on some lines during the second quarter. Other lines, however, held up to former levels, making the present situation somewhat irregular. There has been a general feeling of optimism in Brazil, however, and relatively good business is expected despite the present rather weak market and lower prices for coffee.

The effect of the uncertainty caused by the unsettled military and political situation in China has had a depressing effect on trade, particularly in the North. Up until April, according to Commerce reports, automotive sales were fairly active but stocks of vehicles still are considered too high.

Automotive products have been moving well in Norway, apparently, despite a somewhat general business depression caused by a two months' labor conflict. These difficulties were settled the latter part of June, however, and the generally favorable effect expected on business in general should be reflected in automotive lines as well.

In Germany, another report issued toward the end of June states, the orderly improvement in industry and trade which started in February is still continuing with moderate improvements being made in automotive products.

Automotive sales in Sweden have been good, particularly in the low and medium priced lines, and there has been little change in general business conditions throughout the current year.

#### Prospects Good in Japan

Japan is expected to set a new record for automotive purchases during 1926. The raw-silk market recovered during May; the cotton and textile industries are prosperous and the cost of living continues to decline. In Japan, the lighter type of car has particular advantages, the demand for heavy vehicles being small.

Business in India is good in general, latest reports state, although some tension between Punjab and the United Provinces has been the cause of some anxiety and trade restriction. Although first quarter automotive imports were about equal to those during the same period in 1925, May this year showed a decided increase over May of a year ago.

Car sales in South Africa have slackened considerably of late, according to a special report to *Automotive Industries* from M. Edwards. Prominent traders attribute the slowing down to the reorganization in the industry caused by the installation by General Motors Corp. of an assembly plant. Mr. Edwards writes, but other important factors are involved. The farming industry has not

prospered as well as last year and activity generally is at a relatively low ebb in the country districts.

## Increasing Thermal Efficiency

IN a communication to *Engineering*, Captain R. O. King of the Air Ministry Laboratory gives the results of some tests made at that laboratory to determine the effect of high compression ratios in increasing the thermal efficiency of internal combustion engines. The trials were made on a Ricardo variable-compression engine using gasoline for which detonation occurred at the low value of 4.9 to 1 for the compression ratio. Successively increasing additions of tetra-ethyl-lead to the fuel enabled the compression ratio to be carried by steps to the comparatively high value of 7.35 to 1. The trials were carried out at an engine speed of 1,500 r.p.m., a set ignition advance of 30 deg., and at a constant rate of fuel consumption. The essential figures for the results of the trials are shown as follows:

Fuel Used				B.M.E.P. lb./sq. in.	Highest Useful Compression Ratio
Gasoline	.....	.....	.....	122	4.9
Gasoline, 0.05 p.c. tetra-ethyl-lead	.....	.....	.....	126	5.3
" 0.1	"	"	"	131	5.7
" 0.15	"	"	"	137	6.3
" 0.2	"	"	"	138.5	6.5
" 0.25	"	"	"	140.5	6.75
" 0.3	"	"	"	142	7.00
" 0.35	"	"	"	143	7.15
" 0.4	"	"	"	144	7.35

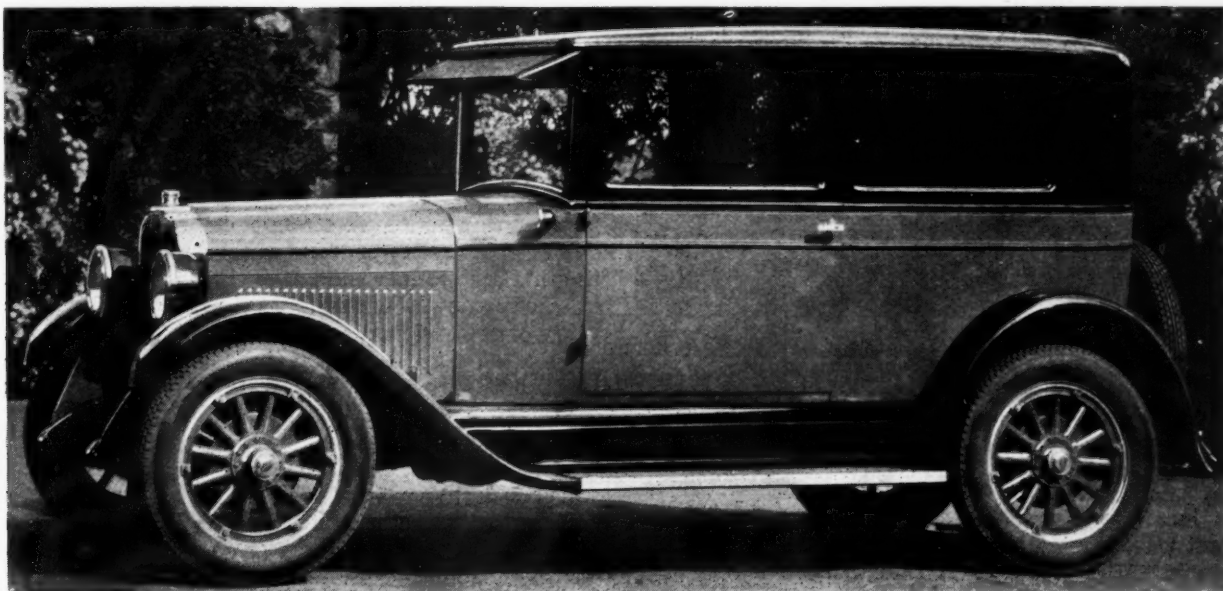
Referring to the figures, the remarkable effect of very small additions to the fuel of tetra-ethyl-lead in delaying detonation is shown in a very striking way.

The increase of indicated thermal efficiency can be deduced from the increase of brake mean effective pressure by making the usual, but probably somewhat incorrect, assumption, that the mechanical losses are independent of load. However, on this usual basis, and with a mechanical efficiency of 85 per cent for the engine, the I.M.E.P. at 4.9 to 1 compression ratio is B.M.E.P. plus losses = 122 plus 18 = 140. The losses, represented by 18, remaining constant, the I.M.E.P. at a compression ratio of 7 to 1 would be 142 plus 18 = 160, representing an increase of indicated thermal efficiency of  $\frac{160}{140} = 14.3$  per cent.

Air standard efficiencies may be used for comparative values of possible efficiencies, and on this basis an increase of compression ratio from 5 to 1 to 7 to 1 gives an increase in thermal efficiency of  $14\frac{1}{2}$  per cent., which is remarkably near the increase realized in practice in the Ricardo engine.

THE German Automobile Manufacturers Association has decided again to hold an automobile show in Berlin this year, the show having been set for the period Oct. 29 to Nov. 7, inclusive. Owing to the fact that the application of the association for re-admission to the International Association of Automobile Manufacturers Associations will not be acted on until next winter, which excludes German manufacturers from shows in neighboring countries, it was decided to limit the coming show to German and Austrian manufacturers, the same as all previous shows since the war. For the first time the Automobile Club of Germany and the German Automobile Dealers Association are to have a part in the management of the show, which seems to reflect a realization on the part of the German industry of the expediency of working hand in hand with the trade and the owners' organizations.





*The two-door Oakland sedan which is finished in new colors and provided with a new wool velour upholstery. New roof lines give the body more symmetrical lines. Price remains unchanged at \$1095*

## New Oakland Has Rubber-Cushioned Driveshaft Joint

Designed to minimize mechanical noises originating in drive.  
Headlights controlled by foot-operated switch. Full  
crowned fenders now fitted. No price changes.

*By Leslie S. Gillette*

**N**EW and more colorful bodies, full crowned fenders, foot controlled headlights, mechanical changes including a rubber-cushioned joint on the driveshaft and an improved "harmonic balancer" are features of the 1927 Oakland introduced this week. The new model is known as the "Greater Oakland Six" and is put out in the same six body styles as the previous model. There have been no price changes.

Except for smoother lines imparted to the rear upper sections of the closed cars, the Fisher bodies resemble very closely the previous line, although many changes in the form of hardware, upholstery and equipment have been made in the interiors. The general appearance of the cars has been improved materially by the adoption of full crowned fenders, thick section running boards and new side shields carrying double beading. A sport phaeton model taking the place of the previous touring car embodies the double-belt effect and is finished in two-tone Duco to correspond with the remainder of the body models.

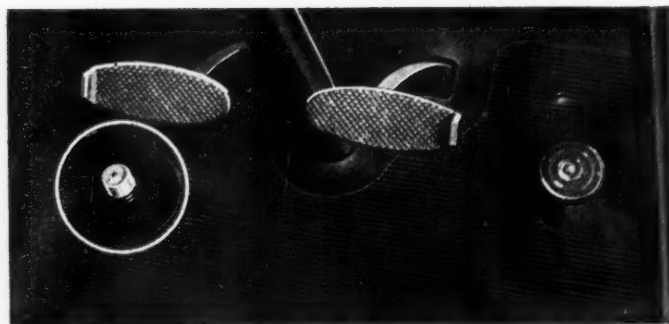
Among the refinements for greater driving comfort is the foot-operated switch for controlling the headlights, which are fitted with two filament bulbs and Tilt-Ray lenses. The switch, mounted on the toe-board just below the clutch pedal, is of the rotary ratchet type, the first pressure on the button deflecting the headlight rays down and the second pressure restoring the normal driving

light. Other improvements along this line include new lens rims which are of the snap-on and lock type, and a reinforced one-piece cross member between the fenders which provides more rigid mounting for the lights.

To minimize mechanical noises originating in the drive from the engine to wheels, a rubber impregnated joint is attached between the front universal joint and the main transmission shaft. As there is no direct mechanical connection between the transmission and axle, there is no tendency for noises to be amplified and at the same time the rubber insert acts as a shock insulator, giving a smoother drive. The unit, manufactured by Muncie Products, consists of three pieces, the outer casing, rubber filler and the drive hub. On the inner surface of the casing and the outer surface of the hub ribs are formed which are staggered with respect to one another. With these two pieces held in proper relation to each other rubber is forced under pressure into the space left between the two metal parts of the joint, forming an integral unit. In assembly the outer casing is bolted to the flange of the front universal joint with the drive hub secured to an extension of the transmission main shaft. In order to provide sufficient room for the new joint, slight changes have been made in the transmission brake assembly, consisting chiefly in reversing the position of the brake drum.

In line with improving the performance of the engine,





*The small button on the floor board below the clutch pedal operates and controls the double-filament head-light bulbs. When the driver desires to dim his lights it is not necessary to remove the hands from the wheel, the foot operation of the button regulating the density of the beam*

changes have been made in the "harmonic balancer" which first was adopted last year. By a new arrangement of the springs the pressure of the pivot pin has been reduced greatly, making the balancer more sensitive and also allowing the use of a lighter balancing weight. In place of the two sets of leaf springs located between balancer and bracket on the crankshaft, two coil springs, one placed on either side of the pivot pin and above the balancing weight, are used. Studs secured to the bracket pass through holes in the weight, the latter being counter-bored to form a seat for the lower end of the spring while the tension of each spring is regulated by a nut screwing down on a recessed washer against the spring and holding it in place. In this design the force of the springs on the balancer is in the opposite direction from the centrifugal force of the balancer weight, whereas in the previous type the leaf springs were operating in the same direction as the centrifugal force.

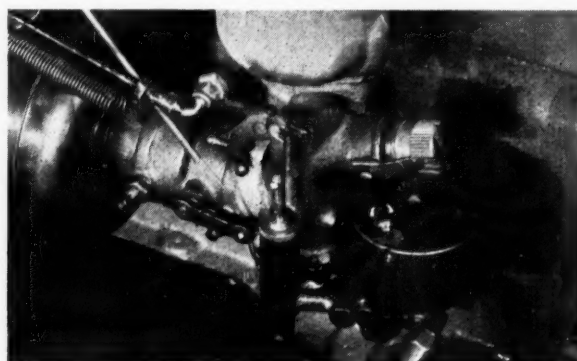
Quieter operation of the valve gear has been achieved through the use of a new camshaft and new valve spring retainers. A quieting curve giving constant valve lifter acceleration from top to bottom of valve travel has replaced the quick rise and fall contour of the previous cams. As shocks are absorbed by the new cam contours, due to a more gradual application and relief of pressure on the cam followers, the noise from the valve lifters is minimized greatly, and the tappets also may be set to a clearance of .007 to .008 in. without developing noise. To provide a rigid seat for the lower end of the valve springs, the customary method of securing the spring retainer by horseshoe washers or pins has been replaced by two tapered split washers and a machined spring seat washer which forms a much firmer mounting for the valve springs, preventing possible wobbling of the spring or uneven pressures on the sides of the valve stems. The spring retaining washer, machined on the upper side to keep the spring centrally located, has its center for the valve stem machined to correspond with the taper of the split washers. The latter, seated in the valve stem groove, have their narrower end upward and the pressure of the retaining washer on the split washers has a wedging effect which holds the spring seat washer firmly on the valve stem.

#### Piston Pins are Lapped

Piston pins, instead of a plain grind finish, are now ground and lapped, which, together with diamond-bored bronze bearings in the piston, produces a 95 per cent bearing surface fit. With an increase in the diameters of the pins from .75 in. to .917 in., the Oakland engineers claim the new engine employs the largest diameter pins found in present small-bore engines. Additional holes

also have been provided to insure sufficient oil reaching the pin bearings. In place of the previous compression rings employed in the bottom or third groove, a Drainoil oil control ring of the slotted type and necessitating relief holes drilled in the ring groove is adopted to carry excess oil back to the crankcase. At the same time a new oil relief pressure valve provided with a perfected guide for the ball check valve eliminates possible vibration of this unit. A change in the oil pan in which a cup is provided to prevent water being drawn up through the intake pipe into the pump eliminates possible freezing of the pump in winter. In the crankshaft, the welch plugs employed for sealing the oil passages have been eliminated and in their place oil holes drilled direct through the crank webs from one journal to another are employed.

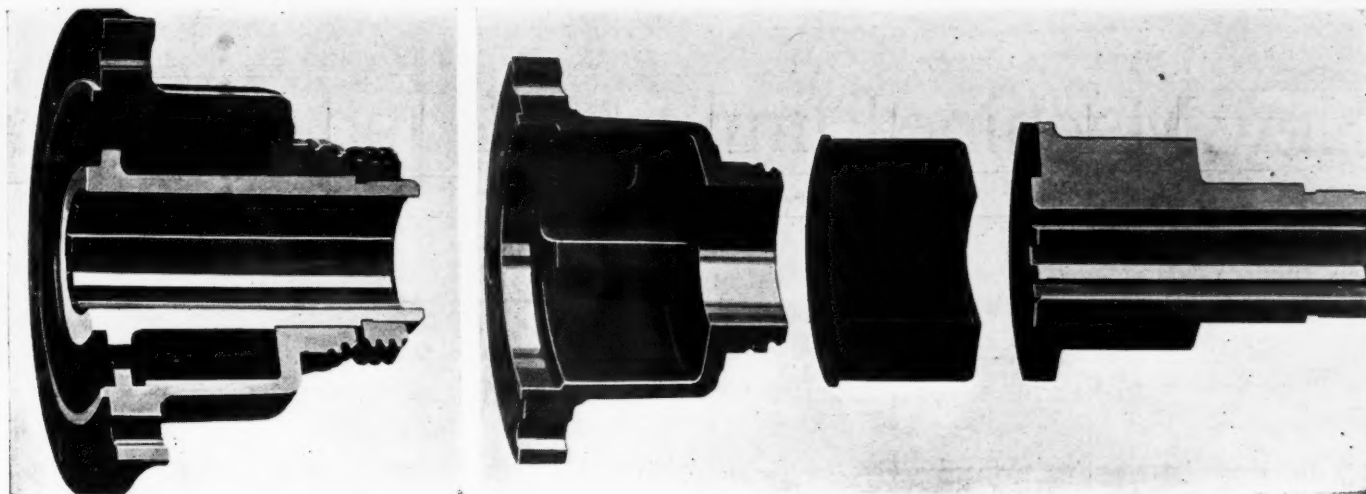
To enable drivers to make their own carburetor adjustments for winter or summer driving or where conditions warrant a change in setting, a new carburetor employing a single adjusting screw is used. The Marvel A-2-S unit is of the two jet type provided with an automatic air valve, economizer and accelerating device. Immediately above the float chamber is a large knurled screw, the operation of which constitutes the only mixture adjustment on the carburetor. On the float chamber cover a small lever is provided with two settings one marked "Winter" and the other "Summer." This provides for a maximum amount of accelerating charge for cold weather and a decreased amount for warm weather. No changes have been made in the manifolding or the method of attaching the A-C air cleaner, although on the exhaust



*The new Marvel carburetor with a single adjustment. The large screw above the float chamber is the adjustment for summer and winter control for acceleration. The unit is so designed that the car owner can make his own adjustments without any danger of upsetting the proper functioning of the carburetor*

line a two-piece elongated type of A-C exhaust muffler is used in place of the conventional cylindrical muffler.

Easier steering is accomplished by increasing the gear ratio of the Jaco steering mechanism from 12.4 to 15.0 to 1 and a more rigid method of mounting the unit to the frame, together with larger bearings and larger half nut. The steering wheel and throttle control lever have been improved while a walnut finished horn button operating a larger and more powerful Remy horn is installed in the center of the wheel. To make for easier riding at high speeds, each wheel assembly is balanced with a counterweight riveted to the felloe to off-set the effects of the tire valve and cap. Weaving of the radiator has been reduced by the adoption of a V-shaped tire-rod of  $\frac{3}{8}$  in. stock which has the apex attached to the radiator shell and the ends of the V attached to the dash in place



Complete assembly and parts of the rubber cushion joint mounted on the rear of the Oakland transmission to reduce noise and absorb shocks. The parts consist of the outer casing, rubber filler and hub drive

of a straight single rod. Instead of a pet cock at the bottom of the radiator for draining purposes, a screw plug operated by a screwdriver and accessible through a small opening in the front of the shell is employed.

A new center frame cross member of Z section replaces a lighter member of conventional section and serves to further reduce frame distortion. Riding qualities have been improved by more resilient rear springs of thinner section and larger curvature. They replace the previous springs which had only the main leaf of chrome vanadium alloy steel and the others of carbon steel. The new springs, with all leaves of chrome vanadium steel, have a lower deflection range of approximately 40 lb. Brakes have also received attention. To eliminate a source of squealing, the action of the rear brake bands and levers has been changed to prevent pinching at the extreme ends of the bands.

The running boards are constructed without screws, the aluminum trim on the edges of the board being secured by a lapping joint. The aluminum moulding is allowed to extend below the bottom of the board which gives a thicker appearance and carries out on both top and bottom the unbroken lines of the fender flange.

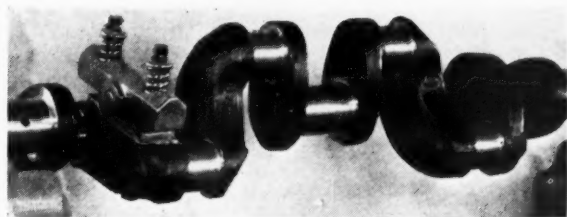
The sedan is finished in Dundee gray, with wheels of the same color, black upper structure and straw colored striping on body, louvres and wheels. The color of the four-door sedan body and wheels is St. James gray, with black upper structure and striping of Fairie red on body, louvres and wheels. The landau sedan and landau coupe

are finished in Peter Pan blue with Robin Hood blue upper structure, gold bronze striping and natural wood wheels. The landau coupe body has been lengthened four inches, while the rear deck is constructed to give greater room and more graceful lines. The rear deck door may be removed entirely. A package compartment door is now provided for golf bags or small parcels, on the right side of the deck.

#### Optional Color Combinations

The four-passenger sport roadster may be obtained in optional Duco color combinations, the standard scheme being Devonshire maroon and El Paso tan, while those desiring a car with less striking colors may have a solid color finish in St. James gray. The phaeton is in two-tone Duco combination of Merrimac beige and Box Elder green.

Standard equipment on the open models includes windshield wings, front and rear bumpers, rear view mirror, automatic windshield cleaner, nickel-plated headlights, cowl lights and gasoline gage on sport roadster. All closed cars have Fisher "VV" windshield, automatic windshield cleaner, rear view mirror, shades, dome light, cowl lights and sun visor. All closed cars except the coupe are provided with smoking sets. Both landau sedan and landau coupe are provided with front and rear bumpers while the landau sedan has nickel-plated headlights. The phaeton model is equipped with a folding top and top boot. All models are fitted with new and larger hub caps.



New type of harmonic balancer adopted on the 1927 Oaklands. In place of the two sets of leaf springs between the bracket and balancer which featured the balancer when it was first adopted on the new series Oaklands last year, two coil springs attached to the bracket pass through the center of the balancer on either side of the pivot pin. This new arrangement makes the balancer more sensitive, and while it is lighter in weight it imparts the same effect

ONE of the rules of the road in France heretofore has been that traffic on national highways has the right of way at crossings over traffic on secondary roads. This rule has now been changed, and hereafter the vehicle approaching from the right has the right of way. The former rule was laid down at the instigation of automobile clubs, who thought it unfair that long-distance traffic over main highways should be held up by local traffic, against the opposition of touring clubs and of the office of the Minister of Transport. It was found, however, that many collisions occurred at crossings of national and secondary roads, generally due to the fact that the driver on the secondary road failed to recognize the cross road he was approaching as a national road. The solution of the problem probably would have been to properly mark all crossings, but this the Minister of Public Works did not consider feasible at present.



# New Machine Eliminates Hand-Lapping of Crankshafts

Does work of two to six men with greater precision. All line and rod bearings lapped simultaneously. Single operator able to handle several machines due to automatic timing feature.

**W**ITH the introduction of the Schraner crankshaft lapping machine another class of individual hand operations has been supplanted by a tool which groups these operations so that a single operator replaces from two to six men, with the added advantage of me-

ber of bearings, it is estimated that a one to two minute floor to floor pass through this lapping machine will produce better, more uniform crankshaft bearing finish than the conventional strapping methods now in use. Marketing of the Schraner lapping machine is handled by Kenneth Ingersoll of the Book Bldg., Detroit.

Fig. 1 illustrates a machine which has been supplied recently to one of the prominent car manufacturers. In this case the crankshaft has nine main bearings and eight rod bearings. The actual lapping members are 17 in number and each carries four relatively soft abrasive stones which are clamped in two mounting members. Construction of the individual heads is shown in Fig. 2. Each of the mounting members is actuated by a spring which produces a clamping action on the crankshaft. These helical springs are enclosed within the rectangular slide members which carry the lapping heads. Hand levers for the release or application of each head are shown in Fig. 1.

As no reciprocation is required for lapping the main bearings, the slides for these heads are pinned freely in slots on the front of the large carrier which is part of the slide on the column of the machine. The fit between the head slides and the slots is close to prevent motion sideways. As these slides are pinned freely in the slots, the heads for the main bearings center on the shaft with no possibility of exerting undue pressure on one side.

## Slides Move in Slots

As reciprocation of the heads for the rod bearings is required, these slides move up and down in the slots similar to those which locate the main bearing heads. Also a tubular extension slides through a hinged guide near the top of the machine. These tubular extensions also serve as connections for the individual kerosene lines which attach to a manifold at the back of the main head. By means of these rectangular slides and tubular pilots, the lapping heads are restrained against sideways motion and held truly in the working positions for both line and throw bearings.

The entire assembly of honing heads and pilot slides is mounted on a large slide which is carried on a column at the back of the machine. The assembly is counter-balanced so that it can be raised or lowered easily by the hand-wheel located at the right end of the bed. A feature which facilitates operation is a single locking lever for the connecting rod bearing heads. When a shaft has been honed, this lever, which is shown near the top of the rectangular guides, is pulled down and thus locks all of the connecting rod slides in an indexed position. Then the head clamping spring release levers are pulled down to open all of the lapping heads, after which the

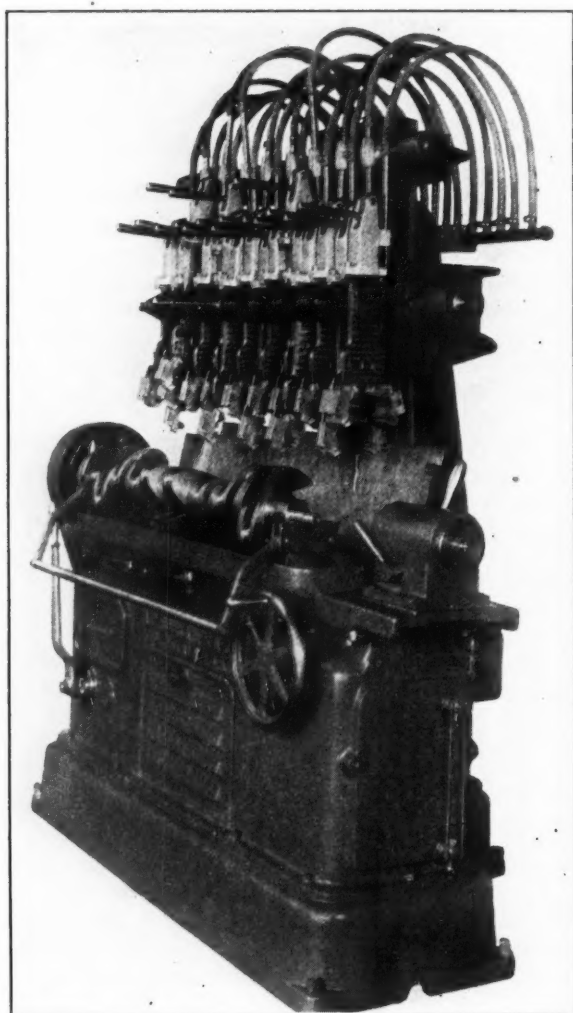


Fig. 1. Schraner crankshaft lapping machine, showing loading device in out position and all lapping heads secured in correct position for quick application to shaft

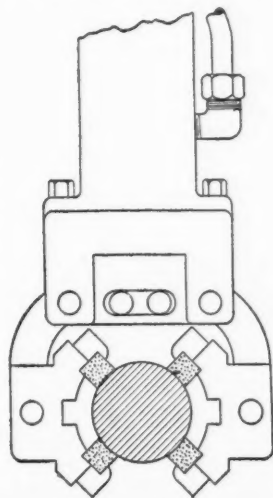
chanical precision of treatment and dimension. All of the line and rod bearings of a crankshaft are lapped simultaneously although the shaft may be for an eight-cylinder, nine-bearing engine. Regardless of the num-



whole assembly is raised up in the clear to allow removal of the shaft. When a new shaft is introduced, a slight swing brings it into position so that all lapping heads contact with their respective bearings when the main head is lowered.

The crankshaft is rotated at moderate speed by a motor in the base of the machine, the drive being through

Fig. 2. Details of lapping head construction. Stones are applied to shaft by spring pressure but are retained in line by guide construction. Note kerosene line which flushes each bearing



a clutch and belt to the headstock. In addition to the rotary motion, the crankshaft with the work table is oscillated by a variable throw eccentric so that circumferential marks on the bearings are prevented. New stones are somewhat shorter than their corresponding bearings. As the ends of these stones wear in finishing the flanges of the bearings, the throw of the eccentric is increased by manual adjustment. The mechanism for this purpose is placed between the top of the bed and the under surface of the work table. The headstock spindle carries a conventional center and a driving plate which contains telescoping pins that enter holes in the flywheel flange to provide rotation.

The tailstock center is mounted on ball bearings and is controlled by a quick acting lever and clamp. Loading is facilitated by the parallel gear shown in Fig. 2, which is in the unloading position. When a new shaft is introduced the bar across the front of the machine is raised and the shaft, which lays in V's, is carried back between the centers although slightly below its position when rotating. During the loading operation, the driving pins in the headstock flange are retracted. When these and the tail stock center are moved in, the shaft is raised slightly and thus clears the V's. The hand lever at the extreme left of Fig. 1 controls the main motor clutch and is in turn controlled by an adjustable dial so that operation time is determined automatically. Due to this provision one operator can handle more than one machine.

Ordinarily but a few ten-thousandths are allowed for the lapping operation and most of this stock is removed in the first thirty seconds' operation. The shaft is ground as usual as this machine is not intended to replace but to augment the work of the grinder. The stones are fairly soft and are selected in each case to meet the particular hardness characteristics of the shaft production. No charging occurs and this operation is an excellent check upon grinding work, in addition to bringing the bearing surfaces much nearer to a dead smooth condition. Usually an extra set of stone mounting fixtures is carried and these are dressed in readiness for application to the lapping heads. The kerosene pump and supply tank are enclosed in the base of the machine.

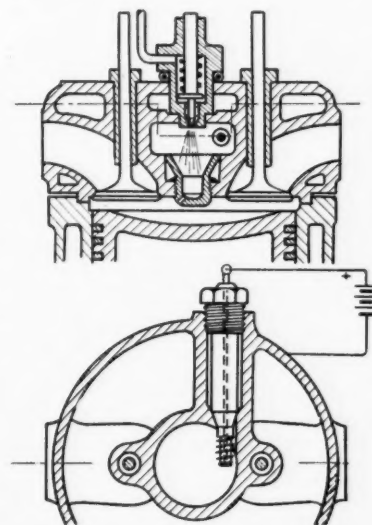
In its present condition, this may be regarded as a standard production machine, as by changing the lapping

heads to suit any size of shaft and by adding or removing lapping head slides, any type or size of shaft can be handled. As with all lapping operations, the luster and character of the finish can be affected by modifying the grain and hardness of the stones. In one case, at present, shafts are lapped for five minutes although the makers of the machine assert that one to two minutes' time will produce highly desirable results. Due to the way in which the stones are piloted, the lapping operation will correct taper and flat spots. In fact, the first few revolutions of the shaft in the lapping machine will show up imperfections arising during grinding.

## Oil Engine Ignition Devices

ILLUSTRATIONS are shown herewith of the two types of auxiliary ignition device sometimes used with heavy-oil engines. The first of these is the hot coil igniter, which comprises

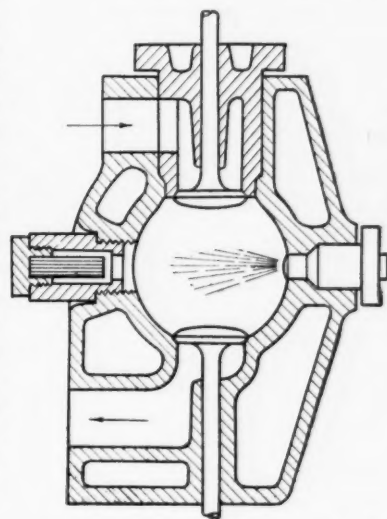
a coil of nickel-chromium wire similar in shape to the filament of a miniature electric bulb, this coil being brought to a red heat by current from a battery. In the particular arrangement here illustrated, which is the subject of a British patent (No. 240,246 of Jan. 6, 1925), the coil is located in an anti-chamber or ignition chamber, out of the direct path of the fuel spray, so it will not be unduly cooled by the spray, but where it is reached by fuel detached from the spray



Hot Coil Igniter for Oil Engines

by the current of air entering the ignition chamber from the working cylinder through a number of small orifices. Another feature of the construction is that the supporting member of the igniter passes through a boss in the cylinder head casting which is completely surrounded by cooling water, so that the igniter is effectively cooled and protected against overheating in continued running under full load.

The other type referred to is the cartridge type of igniter. This comprises a paper wad saturated with potassium nitrate. Such a wad can be lighted with a match and will then burn slowly. In the drawing shown herewith, which is from British patent No. 245,685 of August 13, 1925, the wad is held in a holder which does not project into the combustion chamber and is therefore not subjected to such intense heating.



Cartridge Type Igniter for Oil Engines



## *Frenzied Retail Financing Subsides; Sounder Methods Prevail*

*Situation as regards time-payment sales much improved.*

*Policies now in force should help used car  
movement. Truck paper still avoided.*

AFTER six months on the front pages of the trade papers and more or less prominence in general discussions of one kind and another, the question of automobile retail financing seems to have retired to a place in the ranks of marketing effort. Except for the ballyhooing of a few financiers outside the industry who haven't kept close track of the details of the more recent trends, no major explosion in connection with retail financing has taken place since the proclamation of the National Automobile Dealers' Association in favor of non-recourse financing at its Chicago convention last January.

Since that time, events have moved steadily toward sounder methods, toward less extravagant and less liberal terms, toward better understanding of the function and true nature of financing rates and toward general stability all along the line. There has been no lack of movement in the finance situation during this period, but the developments have been of a more fundamental and less sensational character than were those which held the publicity palm for so many months last year.

### **Still Some Grief**

Retail financing, still an important automotive marketing problem, seems to have reached the stage of steady development. There is still a lot of grief in the situation. Plenty of troubles can be found in many areas, and all the paper being handled today is not on a sound basis. But the general trend has been very definitely away from the cruder and more sensational methods for a number of months. It is not too much to hope, perhaps, that the vital question in regard to automotive instalment buying which still remain to be worked out in

practice may be solved without major upheavals in the merchandising scheme.

The worst of the instalment buying plans have gone. That probably is the most important fact to be recorded in analyzing the present situation.

The Ford \$12.50 plan, the long term plan which had so great a vogue on the Pacific Coast and later in other sections, and other plans involving either very low down payments or very long terms or both seem to be pretty definitely out of the picture today. In many cases the local finance organizations which fostered and utilized them also have "gone West," either through withdrawal from the field or by the consolidation route.

Continued consolidations among finance companies and the passing out of a number of smaller companies which have been going on for several months have tended to remove from the automotive field a certain amount of money which previously was available for financing automobile sales. Up to the present time, however, no shortage of funds for this purpose is noticeable, and it seems certain that with the continuance of the trend toward sound methods ample capital will remain in the field from now on.

The industry is not entirely out of the woods as regards the unsound methods which have been used in the past. Already numerous repossessions have accrued from past imprudences in several places. It is the experience of several important finance companies that repossessions, like car sales, are affected by seasonal influences. After the touring season is over in the summer, according to one large finance company executive, repossessions always increase to some extent. This year the same seasonal increase is expected.



The question arises, however, "Will the seasonal increases in repossessions be greater this year than usual because of some of the very long terms which were extended eight or twelve months ago?" Some such danger does exist, but with every prospect that general business conditions are going to remain firm, no serious fears are being experienced on this score.

The final story has not yet been told on the working out of the finance plans provided by factories for dealers through a factory arrangement with a particular finance company. There is a great variance in different organizations as to how these plans have been applied, how extensively given groups of dealers have used the factory plan, and how successful this type of plan is considered by the factory and the dealers.

The success or non-success of any such plan is difficult to evaluate because total sales and profits—the final yardsticks in any such measurement—must be attributed to a combination of many factors. Consequently, the particular influence of a certain type of factory finance plan on the general achievement cannot readily be determined. The records do not indicate, for example, that any material advantage has accrued to those factories which have been paying subsidies to finance companies because of the lower rates thereby made possible. Several manufacturers who do not pay subsidies, but whose factory arrangements for retail financing otherwise are identical with those of companies which do pay subsidies, have done just as well and in some cases better than the subsidy-paying group this year.

Only a few manufacturers, as a matter of fact, seem to have really pushed their dealers hard in the attempt to make them use the plan provided by the factory. In nearly every case where a factory plan has been provided, a reasonably good share of dealer paper still is being handled by outside finance companies. Several car builders, as a matter of fact, have taken the attitude since the beginning that they would not try to force their dealers to use the factory-provided plan, but that they were offering the plan for the convenience of the dealer should he be unable to make better arrangements.

Whatever the merits of the factory-finance company plans—and there are a number of very definite ones—the factories in general seem to be laying less emphasis on the necessity for their dealers to use a particular plan than they were eight months ago.

The tendency to hold retail terms to a more conservative basis all along the line gradually should have a good effect on used car sales. The excessive terms being offered on new cars made it possible for a long while to buy a new vehicle for about the same down payment and monthly payment as a used car, because the terms naturally were more strict in the latter case. With a return to something like one-third down and 12 or 16 months to pay on a vast majority of new car deals, the used car situation should be eased to some extent.

#### Used Car Terms

Used car terms, generally speaking, seem to have been held to a strictly conservative basis by most finance companies. The dealers themselves still are handling a vast majority of used car paper—or are taking full responsibility for loans of this kind which are made by finance companies—since practically all of the finance companies still are handling less than half as many used car as new car transactions, despite the fact that the latter outnumber the new car transactions nearly two to one.

The holding of used car terms to a conservative basis has not made it any easier for the dealers to move their unwieldy stocks of such vehicles, but it has provided a better basis for future stability than would have accrued from a liberalizing of terms to allow present movement of stocks with subsequent repossessions and losses.

Motor truck financing differs so much from a passenger car financing in many respects that it constitutes practically a separate field. Reports of dealers having difficulty in procuring sufficient support from local bankers to finance instalment sales come from several areas, but no new trends of a definite character seem to be evident at this moment. Finance companies, by and large, continue to look with disfavor on motor truck paper.

## New 40-Hp. French Training Plane Being Tested

HAVING in mind the reduction of the cost of training of new pilots for the French air services, a French pilot, Edouard Albert, has built and submitted to the French Aeronautical Technical Service which passes on Government planes, a 40 hp. training plane which, if adopted as a standard, will aid materially in reducing the French air budget. Albert began the designs of this plane in 1920, but was forced to discontinue his project at that time as there was not in France a light airplane motor of sufficient reliability to serve as a powerplant for this ship. With the construction last year in France of the 35 hp. Vaslin engine, Albert recommenced his studies, and with the collaboration of Robert Duhamel finally evolved the Albert TE-1 plane, which has undergone Government tests with highly satisfactory results. As the Vaslin engine had not been accepted by the Government in time, the plane was equipped with a 40 hp. Salmson engine during the tests.

The plane was designed to a safety factor of 6.32, but static tests were carried on to a factor of 7.5 without deformation. A semi-cantilever monoplane design has been followed, and the object kept in mind was to build a plane which had a good climb, very easy maneuverability, good gliding characteristics, and high efficiency. The result is

a two place ship with dual controls capable of a top speed of 90 m. p. h. with a powerplant of 40 hp., a climb to 1000 meters in 5½ minutes, a landing speed of less than 50 m. p. h. and a cruising speed of 62 m. p. h. The power loading is over 21 lb. per hp. and the wing loading is 2.7 per sq. ft. Following are the major specifications:

Overall length	17.9 ft.
Span	27.6 ft.
Height	6.4 ft.
Wing surface	108 sq. ft.
Chord	4.23 ft.
Weight empty	562 lb.
Useful load	291 lb.
Total weight	853 lb.
Power plant	40 hp. at 2000 r. p. m.
Maximum speed	94 m. p. h.
Cruising speed	62 m. p. h.
Minimum flying speed	53 m. p. h.
Landing speed	49 m. p. h.
Range, cruising speed	620 miles
Range, maximum speed	485 miles
Ceiling	18,000 feet.
Climb to 1000 meters	5 min. 30 sec.
Climb to 3000 meters	21 min. 30 sec.



# Compressor for Air Brake System Has Intake Valve Control

Valve held in locked position when desired predetermined pressure has been built up. Prevents noise of fluttering. Other interesting features found in Christensen system.

*By Walter L. Carver*

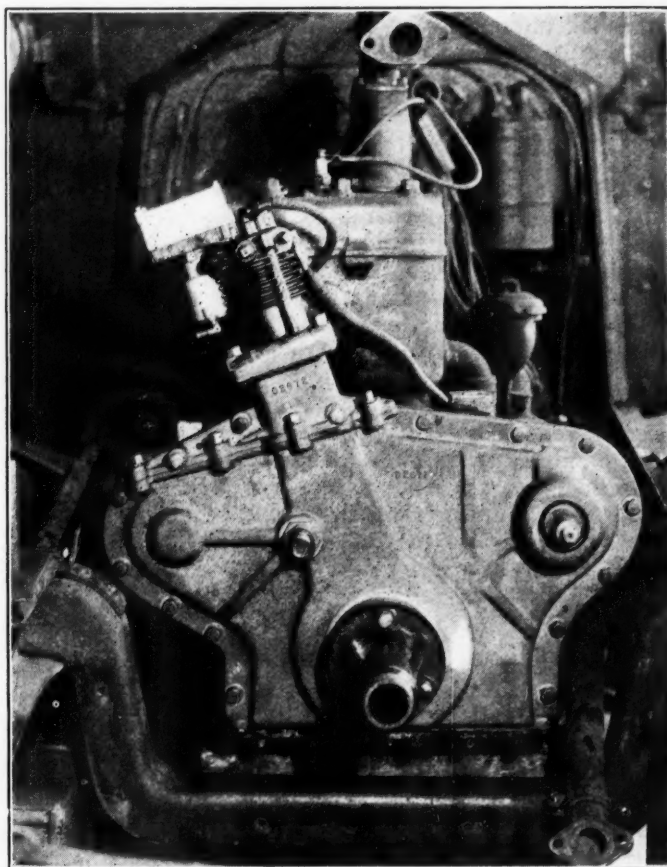
**S**EVERAL interesting features are found in the units of the Christensen automotive air brake system which has been designed for automotive vehicles. The compressor is cooled by both oil and air and is driven directly by an eccentric and strap from the engine crankshaft. A control mechanism with which this unit is equipped regulates the pressure in the storage system without possibility of noise due to fluttering of the automatic intake valve. The control valve permits almost infinite variation of the pressure delivered to the brake cylinders, and the "feel" enables the operator to gage the amount of braking action which is applied. The cylinders are equipped with all-metallic pistons and packing which reduce friction and leakage and eliminate sluggish action.

Several hundred individual installations of this system have been made on trucks and buses and several passenger cars have been equipped experimentally. The various components of the system are the design of Neils A. Christensen whose name has been prominently identified with the development of many pneumatic appliances, including air brakes for street cars and multiple-unit trains, and air starters for automotive engines. At present he is heading the Christensen Air Brake Co. of Cleveland, O., which is equipped for the manufacture of the various components.

## Buda Engine Installation

Fig. 1 shows a typical compressor installation on Buda model BUS engine. A special timing gear cover incorporates a mounting for a single cylinder compressor and an eccentric is mounted on the front end of the crankshaft. From this eccentric a long strap actuates the compressor piston. Owing to the length of the rod as related to the throw of the eccentric, and the use of a counterbalance on the eccentric, the operation is practically vibrationless. This method of installation is advocated in preference to a separate compressor driven by some component of the timing train. With any type of compressor which produces the necessary high pressures, pulsation is bound to occur and where gear drive is involved the whole category of backlash and noise troubles is introduced. With chain drive, excess loads which tend to induce whipping and more rapid wear are imposed on the chain.

With the eccentric drive as recommended, this pulsating action is taken through the least number of parts, all of which are of rugged dimensions. Simplicity is urged as another advantageous factor, the entire drive consisting of the eccentric on the crankshaft, a strap with a two-bolt cap at the lower end and the piston and pin. At least five of the larger heavy duty trucks and



*Fig. 1. Christensen compressor mounted on Buda BUS engine. Timing cover is special Compressor piston is driven by long strap from counterbalanced eccentric on front end of crankshaft*

bus engine manufacturers have cooperated in the design of front ends which will carry this type of compressor mounting.

In addition to the conventional air cooling fins on the cast iron cylinder, the compressor is cooled by engine oil which is delivered to a compartment over the compressor cylinder head. This compartment is designed so that a pool of oil lays above the head and is maintained at constant level. The inflow from the engine oil line is choked to restrict the supply to the correct amount. The oil is discharged over a wall and down through a cast-in tube into the engine gear case, as shown in Fig. 1.

Another unusual feature of the compressor is the regulator valve which controls the automatic intake valve

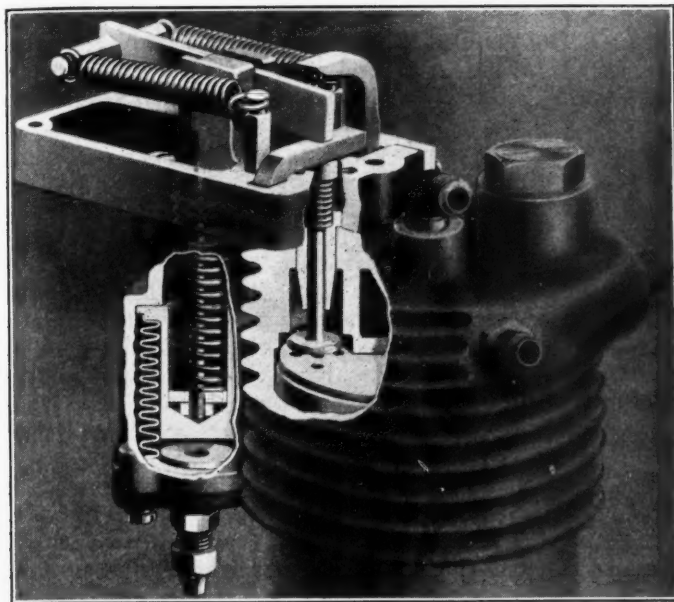


Fig. 2. Automotive pressure control valve which is either normally operative or locked in the closed position, thus eliminating valve clatter

when the predetermined pressure is built up in the reservoir. The latter unit is the usual seamless steel container which is located at any convenient point on the chassis. As illustrated by Fig 2, the control valve consists of a syphon bellows in a separate chamber which connects by a separate copper tube with the

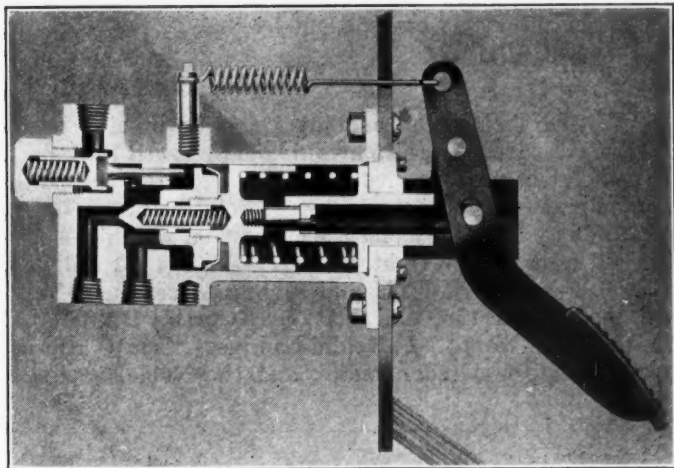


Fig. 3. Foot valve in which internal pressure of brake line balances foot pressure due to action of large helical spring

reservoir. The desired pressure is obtained by adjustment of the spring which is concentric with the bellows. When this pressure is reached, the lower end of the sleeve within the bellows contacts with the lower end of the rod which carries the spring. In turn this member forces one end of a rocker lever up so that its opposite end bears downward on a smaller lever which lays across the upper end of the intake valve stem. With the same motion, a ratchet catch is released and locks the valve in the open position.

Toggle springs restrain the upper rectangular-shaped lever in either the open or closed position of the intake valve. Then, as the pressure falls below the desired amount, the bellows recedes and the pressure of the vertical spring pulls the upper lever over center in a sharp manner due to the action of the toggle springs.

The same motion releases the ratchet catch shown at the rear and the intake valve is free to function normally again. In this manner the intake valve is either normally free or is locked in the open position with no gradual intermediate action (which is the cause of valve clattering in some pneumatic control devices). It is understood that when the intake valve is locked open to no compressing action occurs, as only free air is moved back and forth through this valve. The control valve is enclosed against dust and dirt as shown in Fig. 1. Normal maximum pressures as high as 300 lb. per sq. in. have been used and controlled by this device.

#### Foot Control Valve

Control of the brakes is obtained by the foot valve shown in Fig. 3. Ordinarily this valve is placed so that the pedal replaces the usual foot brake pedal. In this unit, the pedal is counterbalanced and retained in normal position by the feeler spring shown at the top. Depression of the pedal moves a flanged sleeve inwardly, and this member in turn bears on the rear end of a coiled spring. The opposite end of this spring bears against a piston assembly involving a cup packing and a spring-backed exhaust valve at the center. Also, the piston assembly contacts with the intake valve and metering pin shown in the upper left corner.

All of the motion of the control piston head proper is obtained through the large helical spring, and this feature is responsible for the flexibility of control. The first motion of the control piston seats the exhaust valve and closes the system. Continued motion opens the intake valve and the flow is metered by the taper shank at the junction of the head and the stem. Due to the spring actuation of the head, the internal pressure within the system balances the pedal pressure. In case the valve is opened wide suddenly and the pedal then backed off to reduce the brake pressure, the control piston recedes until balance is obtained. In moving back, the exhaust valve is opened and the intake valve closed. Then the exhaust valve closes again just as the condition of balance is obtained.

In driving a car equipped with this system and a pressure gage on the instrument board connected with the brake line, variations in braking pressure ranging all the way from a few to 200 lb. were obtained. It was possible to apply the full 200 lb. suddenly and then cut back to smaller pressure at will or the order of magnitude could be reversed. Due to the feeler spring connected with the pedal, a few stops made the "feel" of the amount of braking action comparable to straight mechanical action, although the foot pressure is much less.

#### Brake Cylinder Action

A typical brake cylinder with its unique piston construction is shown in Fig. 4. In this particular design the air is introduced at the middle of a cylinder containing two pistons. The piston assembly consists of a disk-like head on a short stem which projects into the piston stem and is secured by a washer, nut and coil spring. The disk member seats in a split expansion ring and both are drawn toward the back plate of the piston by the spring. In turn, the expansion ring is inside of a light inert bronze cup, the outer surface of which bears on the cylinder wall.

When air enters, the disk member is forced outward with relation to the piston proper. This action tends to spread the back end of the bronze cup. Simultaneously, the incoming air enters the opening or slot in the expansion ring and sets up a direct radial expansion of this ring and the packing cup. This action is delayed slightly after the introduction of the air pressure into



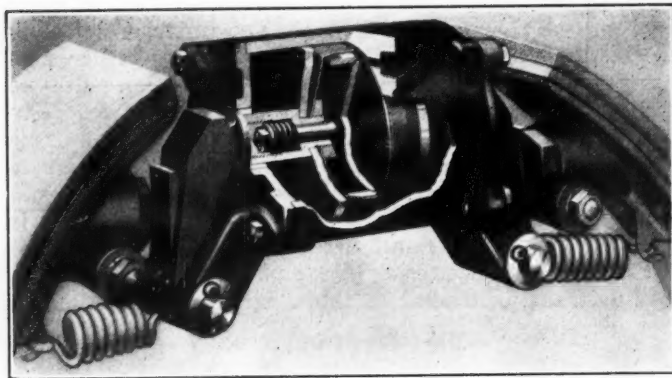


Fig. 4. Typical brake cylinder, showing all-metal packing and means of obtaining mechanical seal

the brake cylinder due to the small opening between the edge of the disk head and the slot in the expansion ring. Therefore, the major portion of the piston travel occurs before the full mechanical sealing action comes into effect. Further, wear on the bronze packing cup is held to a minimum.

Due to the mechanical packing action, the release of the brakes is snappy and follows immediately upon the reduction of pressure in the brake cylinders. This feature also is responsible for the flexibility of the braking system and the ability to brake at fractional pressures.

## Double-End Boring and Drilling Machine

**T**HE machine tool illustrated herewith was designed specially for an axle manufacturer for boring the seats for roller bearings at the ends of the axle housing and at the same time drilling two groups of holes for mounting the brake. On the ways of the machine are mounted two horizontal heads, each containing two form cutters, for the roughing and finishing cuts, respectively. The spindles holding these cutters are provided with longitudinal adjustment, which permits of accurate setting for depth of cut and also compensates for the grinding of the tools.

A cluster of eight drills surrounds the roughing tool in each head, so that, while the rough boring operation is in process, two groups of eight holes are being drilled in each end of the axle.

Motive power for the machine is derived from the electric motor mounted within the base of the machine, making the whole unit self-contained. Power is transmitted to the main spindle by a silent chain and thence to each individual head through a set of spur gears. Spindle speeds commensurate with the size of tools and work to be performed are obtained through gear reductions within the heads. The spindles are carried in ball bearings, and the head units run in a bath of oil.

Mounted centrally on the machine is the work holding fixture. The main part, or base, of the fixture slides on two horizontal bars. Lateral motion from one spindle to the other is obtained by means of the horizontal lever in the center of the machine through a cam action. Motion in both directions is limited by positive stops.

In view of the fact that the locating surfaces on the work itself were very limited and the work had to be brought in accurate alignment, two movable locating units were mounted on the fixture base, these units being operated by the double handle lever shown in the center of the fixture, moving these units in or out simultaneously. The hardened tool steel bushings which locate the work in both of these holding units are also used for pilot bushings for the tools in the heads, while a group of drill bushings surrounding the large center bushing act as guide bushings for the drills.

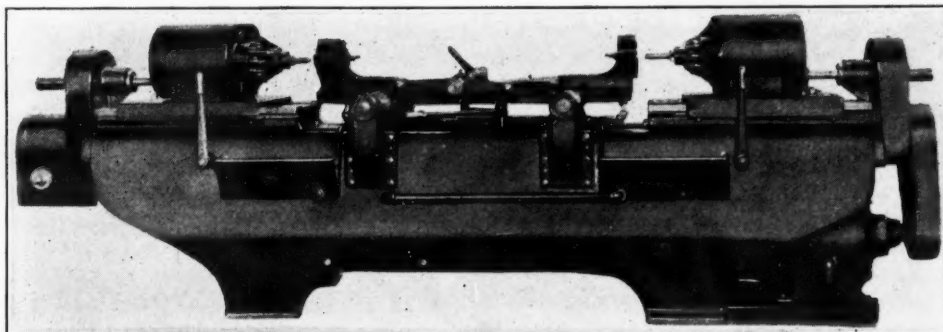
The work is placed in this fixture and, with a rapid action of the double handle lever, centralized and locked in place. The fixture is then moved to its first operating position and the feed is engaged by one or the other of the two vertical handles shown on the two ends of the machine. These two handles are connected together for the convenience of the operator. The feed is obtained through a set of cams mounted on one shaft running the full length of the machine. These cams are arranged for the following cycle of operations: 1, rapid approach; 2, cutting speed; 3, rapid reverse; 4, dwell. At the end of each cycle, the feed is automatically disengaged.

After the first operation has been performed, the work holding fixture is moved to its second position, which brings it in line with the tools for the finishing of the roller bearing seats, and the cycle is then repeated.

This machine was brought out by the Hoefer Mfg. Co., of Freeport, Ill.

**A** RECENT survey of current American practice as regards aircraft ignition equipment showed that about 90 per cent of the late model engines are fitted with Scintilla magnetos, manufactured by the Scintilla Magneto Co., Inc., Sidney, N. Y. Among the engines on which this system is used are: Wright, models T-3, T-3 A, J-4, J-5, R-1200, P-1, P-2, EM, TM and Wright-Morehouse; Packard, models 2-A 1500 and 2-A 2500; Curtiss D 12; Pratt & Whitney "Wasp;" Fairchild-Caminez "Cam;" Rickenbacker-Angle 5-cylinder radial, and the Noble 5-cylinder radial.

**O**N page 880 of *Automotive Industries*, May 27, 1926, the new rail car developed by the Minneapolis Steel and Machinery Co. was said to be powered with an engine having 5¼ in. bore and 7¼ in. stroke. The bore should have been given as 5¾ in.



Special double-end machine for boring and drilling operations on rear axle



# One Mile of Surfaced Road in U. S. for Every 137 Motor Vehicles

38 feet of surfaced road space for each car registered at beginning of 1926. Total surfaced mileage is 145,509. Over 17,000 miles completed in 1925. Federal Aid is big factor.

By K. W. Stillman

ON January 1, 1926, there were 137 motor vehicles for every mile of surfaced State highway in the country. If all the vehicles then in operation were placed on these surfaced roads they would each have about 38 ft. of road space to themselves.

If the unsurfaced mileage of the various State highway systems is added to the surfaced mileage the vehicles per mile is decreased to 73 and the space available for each one—if they are all evenly distributed over the roads—is increased to 72 ft.

Fifty-four per cent of the entire mileage of the highway systems of the several States has been surfaced. Percentages of the States range from 11 in Montana to 100 per cent in Delaware and Maryland.

The U. S. Department of Agriculture has just issued a bulletin containing official figures for highway construction for 1925 and the above information has been obtained from these data in combination with *Automotive Industries'* registration figures for 1925.

Nearly 18,000 miles of roads were surfaced in the various State highway systems during 1925, bringing the total surfaced mileage up to 145,509. In addition to this, 5316 miles of earth road were graded and drained according to engineering standards, making a total of 23,152 miles improved during the year. Federal-Aid projects made up about 10,000 miles of this construction.

TABLE I  
Progress in State Highway Construction—1925

	Mileage in State System	Surfaced Mileage Existing at End of 1925	% Surfaced Mileage to Total	Surfaced Mileage Completed During 1925
Alabama .....	3,953.5	1,833.0	46	266.9
Arizona .....	2,044.4	1,452.5	71	84.3
Arkansas .....	8,295.0	3,795.0	46	586.0
California .....	6,591.4	3,383.3	51	256.9
Colorado .....	8,932.8	3,456.8	39	125.1
Connecticut .....	1,871.9	1,725.0	92	111.5
Delaware .....	505.7	505.7	100	73.1
Florida .....	4,490.0	2,194.7	49	218.4
Georgia .....	6,231.7	2,472.5	40	231.5
Idaho .....	4,627.3	2,196.4	47	204.0
Illinois .....	4,819.5	4,168.2	87	732.9
Indiana .....	3,935.6	3,860.0	98	306.2
Iowa .....	6,674.1	3,029.4	45	347.8
Kansas .....	7,386.0	962.8	13	129.0
Kentucky .....	8,000.0	2,272.3	28	206.6
Louisiana .....	7,000.0	3,821.7	55	424.1
Maine .....	1,459.4	1,218.7	84	46.2
Maryland .....	2,429.0	2,429.0	100	185.1
Massachusetts .....	1,541.8	1,529.1	99	88.0
Michigan .....	6,706.6	6,025.8	90	436.7
Minnesota .....	6,954.5	5,978.6	86	550.2
Mississippi .....	5,500.9	2,689.7	49	63.7
Missouri .....	7,640.0	2,601.4	34	1,260.4
Montana .....	7,957.0	859.4	11	139.2
Nebraska .....	5,619.0	1,881.4	34	966.7
Nevada .....	2,996.7	873.6	29	206.2
New Hampshire .....	2,081.2	1,767.9	85	140.2
New Jersey .....	1,290.0	1,181.9	92	84.1
New Mexico .....	9,159.0	1,615.5	18	138.2
New York .....	13,900.0	9,625.9	69	589.3
North Carolina .....	6,432.2	5,311.5	82	976.6
North Dakota .....	6,174.0	803.5	13	262.4
Ohio .....	10,784.0	9,501.6	88	1,286.3
Oklahoma .....	5,589.0	1,348.4	24	267.3
Oregon .....	4,446.3	3,008.4	67	204.4
Pennsylvania .....	10,827.8	7,655.5	71	1,012.7
Rhode Island .....	768.4	405.8	53	37.6
South Carolina .....	4,951.0	3,220.8	65	242.0
South Dakota .....	5,918.0	2,023.0	34	551.4
Tennessee .....	4,644.4	2,599.4	56	291.4
Texas .....	16,668.0	7,954.0	48	1,027.7
Utah .....	3,132.3	1,058.0	34	120.7
Vermont .....	4,466.0	3,067.4	69	199.0
Virginia .....	4,920.4	3,559.9	72	*172.5
Washington .....	3,266.0	2,542.0	78	287.3
West Virginia .....	3,664.0	1,262.7	35	284.7
Wisconsin .....	10,264.5	7,978.0	78	1,315.7
Wyoming .....	3,143.3	801.8	26	97.8
Totals .....	270,653.6	145,508.9	54	17,836.0

\* Last six months only.

## 32,218 Miles Graded

There are now 145,509 miles of surfaced roads in the country and 32,218 miles of graded and drained roads while 92,928 miles in the State highway systems are still to be improved. The State highway systems comprise the important roads of the country which have been laid out to serve the needs of the States and it is upon these roads that the routes of the Federal-Aid system have generally been laid down.

The 145,509 miles of surfaced roads are made up of the following types: Cement concrete 27,875 miles; bituminous concrete 4821 miles; brick 3111 miles; sheet asphalt 839 miles; bituminous macadam 10,985 miles; surface treated macadam and gravel 15,858 miles; water-bound macadam 4804 miles; gravel 64,408 miles; sand-clay 12,677 miles; miscellaneous 131 miles.

THE Soviet Government is having three types of passenger cars developed, on the basis of the results obtained in the All-Russian automobile contest held last year. The object is to combine minimum cost of production with the highest operating economy and best adaptation to Russian road conditions. The work along this line is being done by the technical-scientific department of the Supreme Council. The cars are to have piston displacements of 67.1, 73.2 and 97.6 cu. in. A Russian publication bearing date of October 24, 1925, states that the design work was then in progress and it was expected that the experimental cars would be completed inside several months.

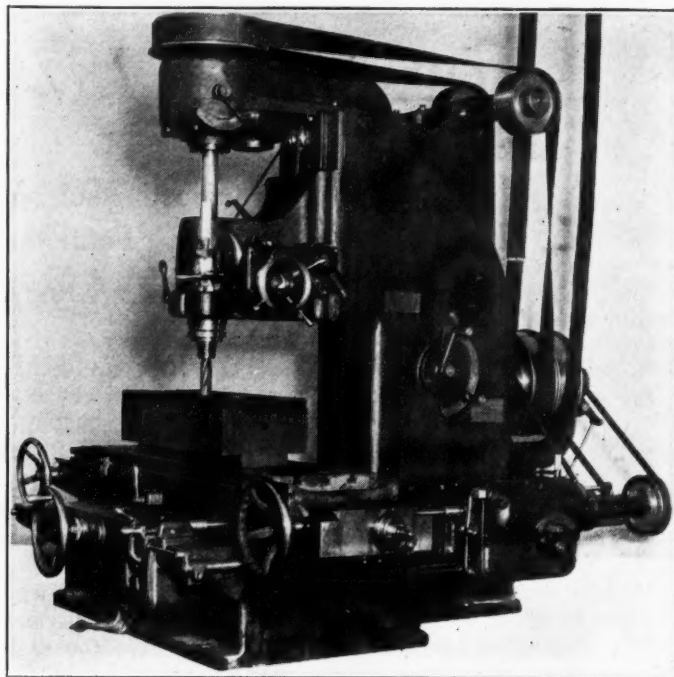
# New Machine Tool Equipment

## Hydraulically-Pressed Bearings

**B**EARINGS manufactured by a new process are being offered to automobile manufacturers and others by the Hydraulic Pressed Bearing Co., of Niles, Mich. By this process the bearing is formed from the virgin stock while heated to a moderate degree, at which temperature its composition will not be affected.

The press used is a specially designed 200-ton Oilgear, four-column speed press having a 6 in. stroke, 18 in. daylight space and 24 in. clearance between columns. This press has a rapid approach to the work of 100 in. per minute, and a quick return of 200 in. per minute. The Oilgear pump used for actuating the press is equipped with a pressure variometer which enables convenient adjusting of the line pressure to anything between 300 and 1000 lb. p. sq. in. The press is capable of making ten 6 in. strokes of 200 tons pressure per minute.

It is claimed for these bearings that they are free from blow-holes, fissures and strains, and that the use of virgin stock in the solid state prevents segregation of the elements of the alloy. By the method described the bearing is completed in the press, and subsequent turning and cutting operations and incidental wastage of material are avoided.



New No. 6 Becker die sinker

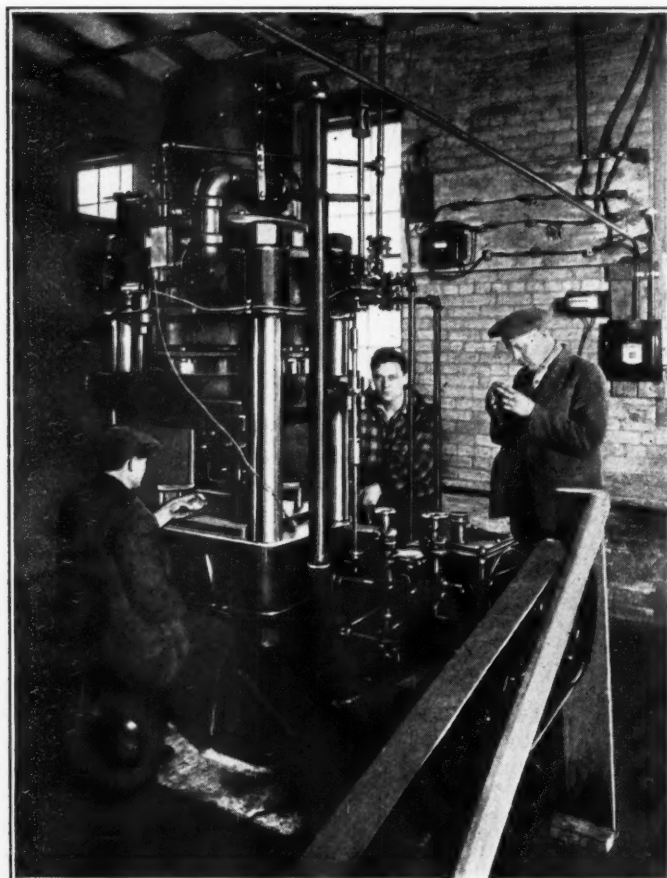
## New Die Sinker Model

**A** NEW model of the No. 6 Becker die sinker or vertical miller has been placed in production by the Reed-Prentice Company, Worcester, Mass. It is of greater size and weight than the previous model, the maximum distance from the spindle to the table being 30 in. and the distance from the spindle to the column, 29½ in. The machine embodies the same features as the former Becker No. 6 die sinker, which is widely used in tool room work. The range of adjustment of the head on the column is 18 in., the range of adjustment of the spindle, 10⅞ in., the working surface of the table is 72 by 20 in., the table has a longitudinal travel of 72 and a transverse travel of 30 in., and is 29 in. above the floor. The rate of the rapid traverse feed in both directions is 125 in. per minute.

## Surface Grinder Attachment

**T**O meet the requirements in certain classes of gage and tool work, the Abrasive Machine Tool Co., East Providence, R. I., has developed a high speed attachment for its No. 3 surface grinding machine. The illustration shows a 3-in. wheel ⅜ in. thick and mounted close to the bearing, but smaller wheels and also extension wheel arbors are provided for. Each wheel arbor carries an integral pulley of the correct diameter for the desired wheel diameter.

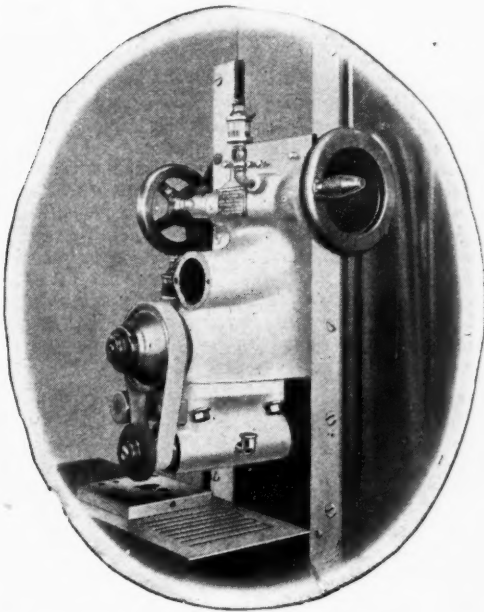
The wheel spindle is massive and rotates on Norma ball bearings. It is provided with a No. 2 Morse taper. Power is derived from the large pulley mounted on the main spindle in the wheel adapted. An endless canvas belt is employed, and adjustment can be made by means of an idler pulley also carried in ball bearings.



Making soft metal bearings in an hydraulic press



# for Automotive Production Work



Attachment for Abrasive No. 3 surface grinder

## Bullard Vertical Lathes Improved

SEVERAL changes and improvements have been made in the line of vertical turret lathes of the Bullard Machine Company, Bridgeport, Conn. They include the following:

The bed casting has been strengthened and machined pads are now provided on the bed of all machines for the support of a forming attachment bracket for the side head. This forming attachment is of two types, the plate type for crowning pulleys and the machining of other similar contours, and the universal type which may be set to cover a wide range of angles as required in machining bevel gears.

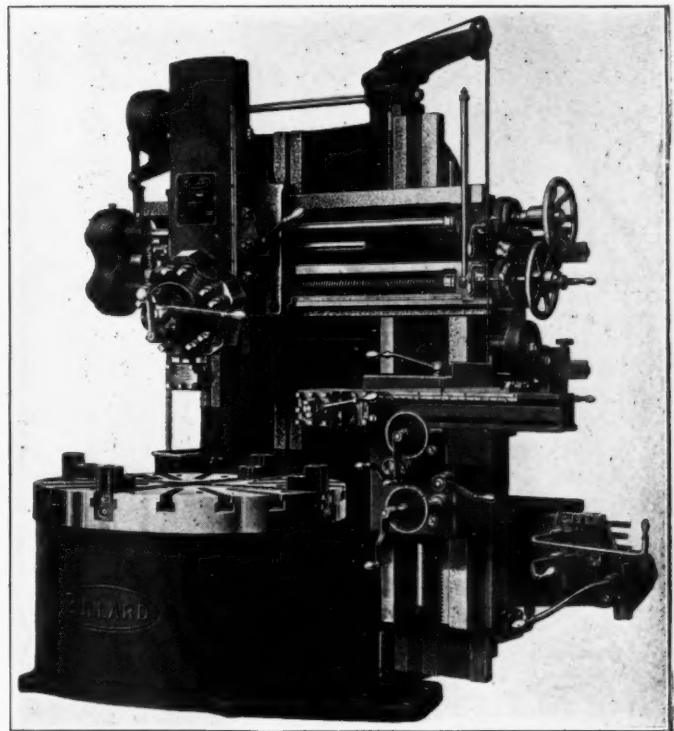
Material specifications have been changed to include a cast steel main slide and all steel turret, and a steel side head slide.

Alemite Zerk pressure oil gun lubrication has been adopted for all bearings in external units not having a fixed relation to the bed, and therefore, not reached by oil from the constant flow system or other unit reservoirs. The Alemite gun No. 3A is furnished as standard equipment with each machine shipped.

## Double-Spindle Rigidmil

FOR milling bolt bosses and separating the caps from connecting rod forgings, the Rockford Milling Machine Co., Rockford, Ills., has brought out a double-spindle type of its Rigidmil, as herewith illustrated.

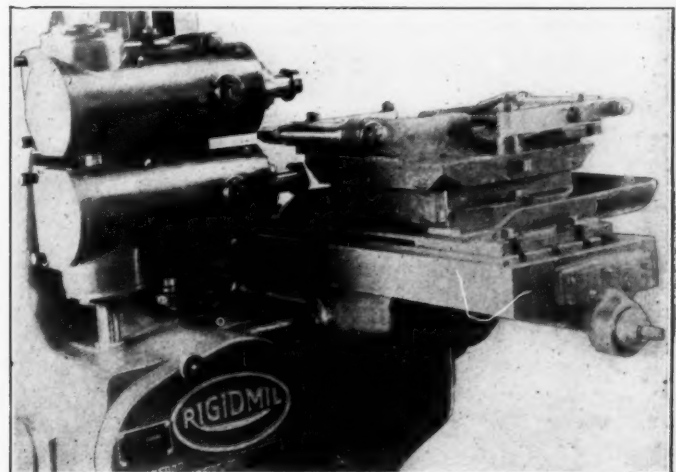
Reference to the photograph will show the relative positions of the two cutter heads—one above the other and each independently adjustable. The two heads can be adjusted vertically in unison by the main adjustment at the front of the machine, and the space between heads can be adjusted by means of a screw, while transverse



New Bullard vertical turret lathe

adjustment is made by means of quills. Each spindle carries a gang of cutters designed to face off the bolt lugs and part the head on both sides.

Two fixtures are mounted on an index base which permits loading and unloading while milling. The rods are held securely on a pin registering on the small end, and the large end is supported by a bar and held with a swinging floating clamp, locking the cap in place until the cutters have returned to the starting position. The purpose of the float is to prevent the caps from moving, thus preventing breakage of the cutters on the return stroke.



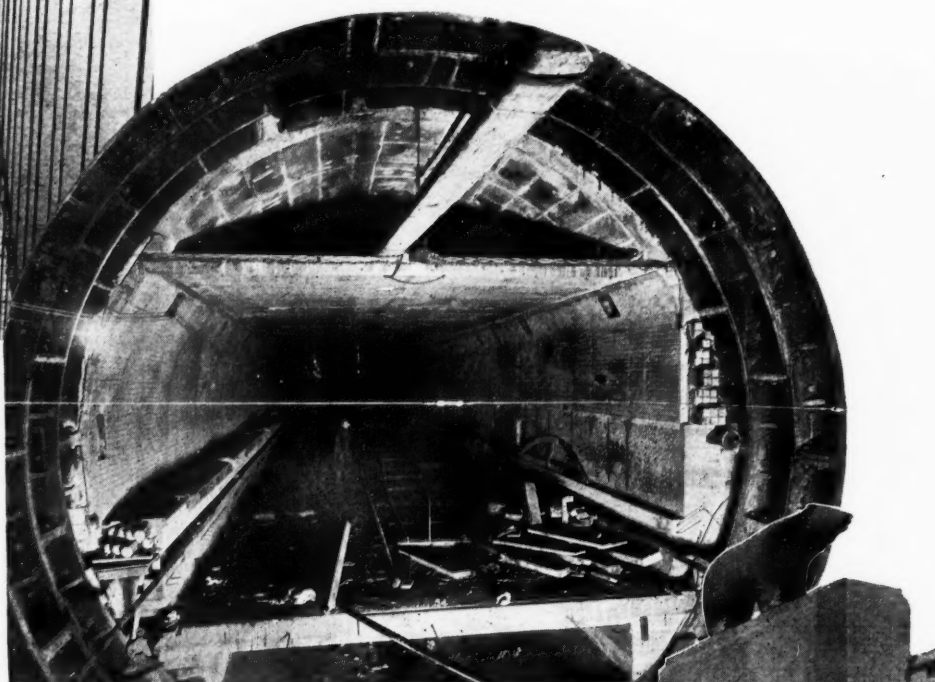
The new double-spindle Rigidmil

## New Highways Over and Under Rivers

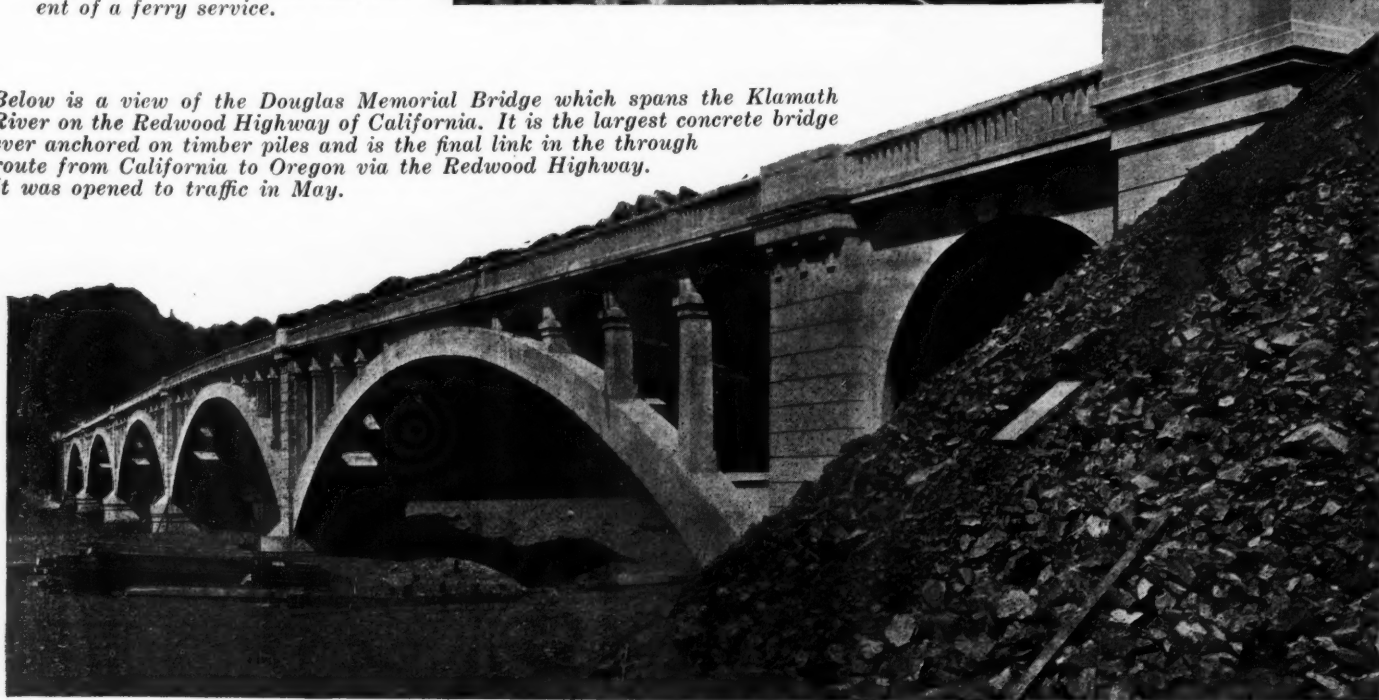
Few indeed are the obstacles to progress which the automobile can not overcome. On this page are pictured three gigantic new bridge and tunnel projects which may be traced directly to the press of automobile traffic. The great suspension bridge at the left spans the Delaware River between Philadelphia and Camden, N. J. It was opened July 1 and obviates the necessity of depending on ferries for the transportation of cars between these points. The bridge is 9500 feet long with a 57 ft. roadway and has a capacity of 6000 vehicles per hour. A toll of 25 cents is levied on passenger cars while the fee for commercial vehicles is based on weight.



The photograph on the right shows a section of one of the two Holland tubes which have been built under the Hudson River to handle automobile traffic between New York City and New Jersey. It is expected that these tubes will be opened to traffic during the coming fall. They are 9250 ft. long and will have a daily capacity of 46,000 vehicles. They are costing \$49,000,000. A toll will be collected. This is another project which makes the motorist independent of a ferry service.



Below is a view of the Douglas Memorial Bridge which spans the Klamath River on the Redwood Highway of California. It is the largest concrete bridge ever anchored on timber piles and is the final link in the through route from California to Oregon via the Redwood Highway. It was opened to traffic in May.





# Four Factors in Marketing of Service Parts By Car Manufacturers

1. *The market and its buying habits.*
2. *The distributive functionaries necessary.*
3. *The merchandising requisites.*
4. *The competition.*

By A. R. Sandt\*

*Sales Section, General Motors Corp.*

THE importance of properly marketing service parts, from the standpoint of the motor vehicle manufacturer, is emphasized by the fact that successful maintenance depends upon adequate parts service, and adequate parts service depends upon the efficiency of the marketing plan utilized.

A successful marketing plan is one which effectively, economically and profitably tends to correct the mal-adjustments existing between production and consumption. Obviously, these mal-adjustments exist in a very aggravated form in the service parts business. That is, the car owner cannot ordinarily anticipate his needs, nor can he be induced to participate to even the slightest degree in the anticipation.

Most of us remember the time when spare parts were carried in the tool box of the car or were, at least, shipped with the car, similar to the existing practice of shipping motor vehicles to certain foreign fields. Today, however, if it is the desire of the motor vehicle manufacturer and his commercial organization to obtain the maximum service parts business accruing from their vehicles in operation, it is absolutely necessary for them to have a sufficient quantity of parts, of the right size, in close proximity to the place and at the time they are needed by the consumer.

In developing a service parts marketing plan, the motor vehicle manufacturer must keep in mind that the service parts business, like other businesses, is in a constant state of flux. That is, methods which are successful today may not meet the requirements of tomorrow. These ever changing conditions may not be as fast as they are forceful, but when obstruction is encountered, a new channel is cut and progress continues. The proper marketing plan then, is one which adapts itself to being revamped in the light of new conditions which present themselves on the market.

The outstanding factors entering into the preparation of any motor vehicle manufacturer's service parts marketing plan may be outlined as follows:

- 1.—The market and its buying habits.
- 2.—The distributive functionaries necessary.
- 3.—The merchandising requisites.
- 4.—The competition.

The market for service parts, naturally, is the owners of the particular make of vehicle produced. Fairly accurate registration figures as to makes of vehicles are available by States and counties. These figures, however, do not give the models and types of these particular makes. Furthermore, the motor vehicle, as its name implies, is a piece of mechanism which does not stay in one location, or at least should not, but moves about and with the advent of better roads it is safe to say that these vehicles are daily covering greater mileage from their base of operation.

## Failures on the Road

However, a part or its adjacent parts never fail when the vehicle is standing at the owner's residence or parked at his place of business. And as stated before, it is next to impossible to get an owner to play his part in preventative service insofar as service parts are concerned. But even if it were possible, preventative service will not avoid the failure of parts due to accidents on highways and other unexpected conditions.

These facts indicate that we have a very shifting market which necessitates a careful analysis of the consumer's buying habits.

Such an analysis indicates that the consumer's service-parts buying habits reflects to a great degree his buying habits of other *convenience* and *emergency* merchandise. That is, the consumer is generally unwilling to seek out a particular store where a certain brand of this type of merchandise may be purchased. Observations indicate that the average car owner is inclined to

\* Paper read at 14th annual Factory Service Managers' Forum of the National Automobile Chamber of Commerce, Detroit, June 15-16.

patronize the most convenient service station to his residence or place of business, or will go to the first one he can find when he needs emergency service—quality of work and prices charged, of course, are given due consideration.

And dealers agree that it is extremely hard to hold the service work of an owner of a four or five year old car because, generally speaking, he has purchased such a car second hand at an extremely low price and is therefore inclined to patronize the less commodious quarters of the back alley repair shop. Many dealers, in order to retain the good-will of their used car buyers, will encourage such a buyer to come back for his service work regardless of the make of the car.

The foregoing facts indicate that the car owner may, according to conditions, patronize any automotive service station.

It is reported that there are some 80,000 automotive service stations in the United States. From the individual motor vehicle manufacturer's standpoint they are divided among his own authorized service stations, competitive dealer service stations, independent service stations and fleet owners operating their own service stations.

Research indicates that the consumer is primarily interested in only two things when he needs service. They are—"When can I get it and how much will it cost," or "How much will it cost and when can I get it," according to the conditions existing at the time the purchase is made.

The average owner apparently depends entirely on the service trade for the selection of the brand of parts to be used.

With these facts before us, I believe we are safe in summing up the vehicle owner's buying habits as follows:

1.—Due to convenience, necessity, acquaintance or solicitation he may patronize any one of the 80,000 automotive repair shops.

2.—Generally speaking, he depends on the service trade for the selection of the kind or brand of service parts to be used.

Apparently then, the service trade has been appointed the purchasing agent for the consumer, so we must consider his buying habits.

### Two Classifications

From the buying habit standpoint, the service trade may be classified as the authorized service trade and the competitive service trade. Naturally the buying habits of each classification will vary in accordance with their relations to the individual manufacturer and the manufacturer's policies.

In the past it was necessary for the service trade to purchase all of its service parts requirements from the motor vehicle manufacturer. Changed conditions in the service parts business, however, have made it possible for them to change their buying habits so that now they may buy much of the service merchandise frequently required without looking to the motor vehicle manufacturer as a source of supply.

Investigation indicates that the manufacturer's au-

thorized service trade is inclined to purchase practically all of its service parts requirements from the manufacturer it represents. The phrase "inclined to purchase practically all" means that the practice varies from those who say they buy only what they have to from the manufacturer, to others who say they buy absolutely all service parts through the manufacturers.

In the case of the competitive service trade, I believe I am safe in saying that they are inclined to purchase only such parts as are necessary through the manufacturer's authorized parts purveyors, due to the fact that they have not been properly included in the manufacturer's program.

Investigation indicates that they have a brand preference in favor of genuine parts. However, since they cannot purchase such parts to advantage they purchase the many standard brands offered, if their previous experience with the brands has been favorable, or if the supplier's merchandising efforts have made a favorable impression.

### Trade's Buying Habits

The service trade's buying habits may then be briefly summed up as follows:

(a) The authorized service trade is inclined to buy only from the vehicle manufacturer it represents, and,

(b) The competitive service trade is not inclined to buy from the vehicle manufacturers' service parts purveyors unless they have been properly recognized in the manufacturers service parts marketing plan.

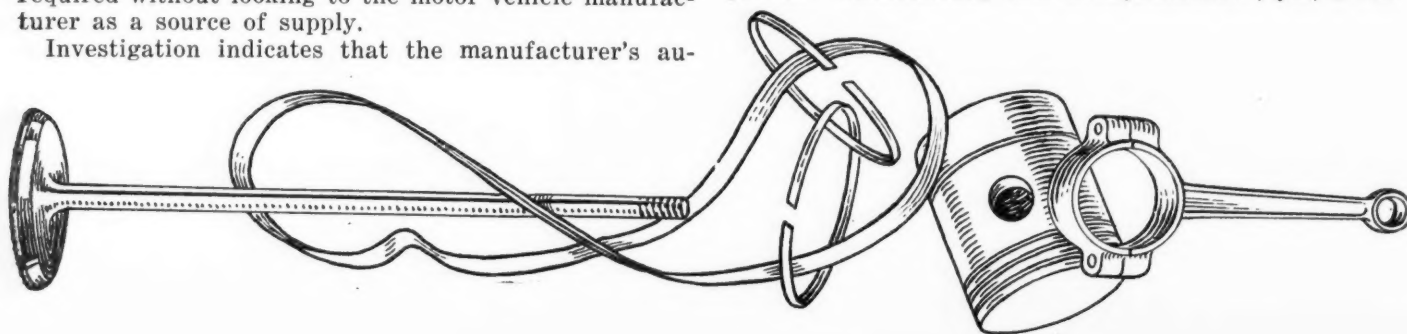
The second factor entering into the preparation of the marketing plan is the distributive functionaries necessary to reach the ultimate consumer.

I believe that since the motor vehicle manufacturer already has a commercial organization handling its service parts, improvements should be made in the effectiveness of his existing organization, for the present at least, rather than to make any radical changes in the basis of distribution. Therefore, let us consider how nearly his existing organization meets the requirements.

At present he has, generally speaking, wholesale establishments and retail establishments which have been called his authorized organization. A review of the market, however, indicates that the competitive service station plays an important part in the distribution of his genuine service parts and should be included in the distributive steps.

By carefully considering the marketing characteristics of the commodity and the market's buying habits, a typical distributive set-up would be as follows: Motor vehicle manufacturer to his branches or distributors, to all of his retailers, to competitive service stations—with no restrictions on any of these distributive functionaries as regards the selling of parts at retail to the consumer.

Such a set-up requires that a competitor sell to a competitor. Theoretically this is objectionable; yet, a cur-





sory investigation of existing practices covering such a policy will indicate that courtesy discounts are now being given on a small scale, and that if the discounts and margins are made adequate, no difficulties, other than personal ones in isolated cases, will be met.

Now if the manufacturer's existing organization cannot be induced to actively cooperate in aggressively encouraging the use of their service parts, there will be time enough then to consider other means of distribution.

The third and probably most important factor entering into the marketing plan is the merchandising requisites need to gain and hold a market.

Without consideration to their relative importance, these requisites may be divided into three groups:

- 1.—Profit margins and pricing.
- 2.—Merchandise control.
- 3.—Selling requirements—solicitation, packaging, branding and advertising.

Having determined the distributive steps necessary to reach the consumer, we can only hope to gain their wholehearted cooperation through granting them an adequate margin of profit. Naturally these profit margins should be based on the existing costs of doing business in each distributive step, with adequate compensation for the capital used, risks assumed and effort expended.

To establish these margins, we should ascertain the margin required by the first distributive functionary contacting with the buying public, who does not carry service parts for re-sale to the trade. This functionary would be the competitive service station.

After establishing his needs, the next margin to be added would be that of the community wholesaler. This functionary would be the authorized dealer organization, his margin being based on his cost of doing business plus a fair net profit, when actively selling the competitive trade at the prescribed discount and to the consumer at list, which would indicate the discount from list he should be allowed.

#### Cost of Doing Business

To this discount must be added the cost of doing business of the territorial wholesaler—the authorized branch and distributor organization—when actively selling to the authorized dealer organization at one discount, to the competitive trade at another discount and to the consumer at list. This will give the maximum discount to be allowed, or the distribution burden required on the service parts.

The desirability of using flat discounts or a base discount with net-lot prices depends upon the degree of thoroughness with which you wish to go into this factor.

Having established the distribution burden on the service parts business, it is then possible to analyze the proper pricing policy.

In the service parts business, from the motor vehicle manufacturer's standpoint, we find that such a policy is affected by the following factors:

(a) Cost of merchandise, including parts department operating expense plus a fair net profit on capital invested,

(b) Competitive parts supplier's net trade prices on new and used service parts, and

(c) Competitive vehicle manufacturer's prices when in the same vehicle price class.

#### Factors Governing Price

In other words, prices must be based on costs of production and marketing, general competitive conditions, together with the law of supply and demand, and the peculiar consideration of this business.

It is evident then, that "Pricing" is a subject which requires the attention of personnel capable of intelligently dealing with all of the influencing factors in the service parts business.

Through the use of the proper merchandise control system it should be possible for the manufacturer's parts distributing organization to have on hand or near at hand, according to the frequency of the demand, the parts needed. This merchandise control system should endeavor to assure a well balanced stock, an adequate stock-turn and a fair net profit, if the margin allowed permits.

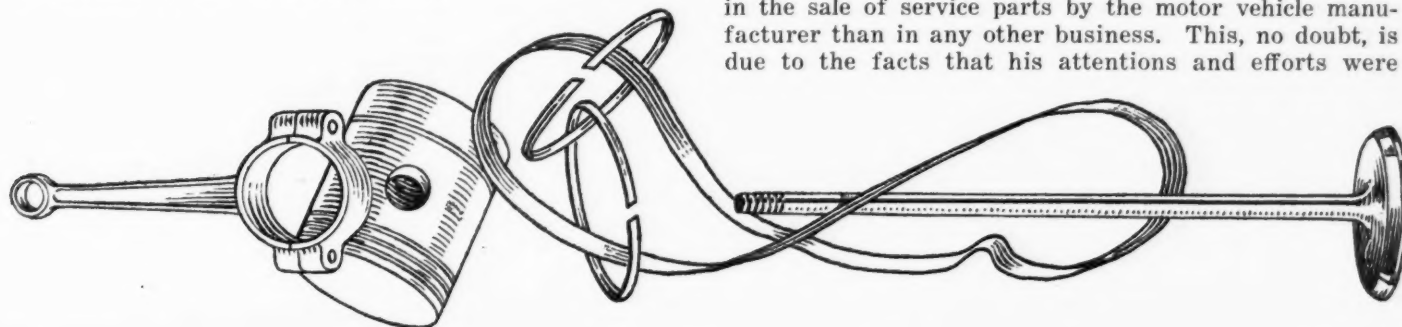
Manufacturers who have recently endeavored to round out their sales outlet's stocks have found that they are somewhat reluctant to invest more money in service parts. From my visits with no less than 500 motor vehicle sales outlets in the past two years, I believe I am safe in saying that, on an average, the existing outlets have a large enough stock of service parts from the dollar volume standpoint but not from the items standpoint.

The manufacturer may help improve this condition by insisting that his sales outlets carry a varied, but complete stock, and reorder frequently and through aggressive merchandising.

Any one of the many stock control systems on the market today will be productive of the desired results for the larger establishments which have a capable full-time man in charge. However, these systems are not applicable to conditions existing in smaller establishments. That is, when the service parts volume does not permit the use of a full-time man, it is necessary to have the stock accessible to almost anyone working for the company. This spells failure for any system that depends on the written word. Not having on hand the items wanted is as bad, if not worse, than being overstocked.

The existence of either one, or both, of these evils may be minimized in the smaller establishments by using an appropriate application of the "Tag and Tab" system of stock control. This system is being used with success in retail stores dealing in shoes, hats, phonograph records, etc. It has also been applied to the service parts business by the competitive parts supplier.

Less constructive sales strategy has been employed in the sale of service parts by the motor vehicle manufacturer than in any other business. This, no doubt, is due to the facts that his attentions and efforts were



required in other directions, and that at one time his market had to depend on him.

Whatever history may disclose on this, today volume and competition demand that the service parts business be treated as an industry in itself. When it is considered as a business by itself, we find many essential sales factors lacking. The first being the matter of solicitation.

The motor vehicle manufacturers who have exclusive service parts representatives can be counted on one hand with several fingers to spare. They have followed too closely the theory of the old mouse trap story and believe that the merchandise they are offering is so good that the market will beat a pathway to their door.

Certainly a business of this size presents problems which need the attention of exclusive representatives in order to keep the channels of distribution open. While we may feel that our authorized distributive organization should patronize only us, we find that due to numerous reasons even our own organizations are purchasing some of their merchandise through other sources.

#### Feel They are Slighted

Furthermore, competitive service stations, especially the independent service stations, feel that we do not desire their business. This is due probably, to the attitude we have had towards them in the past and because of the fact that we do not now solicit their business. Courtesy, friendliness and a comprehensive working knowledge of the manufacturer's service parts business should be the outstanding qualities of these parts representatives. These qualities also apply to the counter-men.

Another factor which helps sell merchandise is proper packaging. Proper packaging not only means that the container should protect the merchandise in handling and storage and from the elements, but it also means that, today, these containers must be attractive in order to help sell the merchandise. A few manufacturers have recently recognized these facts and are taking advantage of them.

Branding parts with the manufacturer's trade-mark is also essential. Through branding any one handling the parts may know the manufacturers thereof, and it also prevents the unscrupulous competitor from representing his merchandise, directly or implied, as coming from the original stock. Furthermore, it makes it possible for the consumer to know whether the particular brand of parts which he wants are or have been used.

After the foregoing merchandising and distributing requirements have been properly met, it is then possible for us to advertise our merchandise. Our advertising should be constructive and, as reflected by the buying characteristics, it should be primarily directed to the service trade at large. Our advertising in the past has been devoted almost exclusively to promoting the phrase "Beware of Imitators." I believe that if we make our service parts good enough and the plan behind it sound enough—this plan being founded on constructive ideas rather than destructive ideas—that our competition will take care of itself.

Instead of fighting this competition, we should use it as evidence of our superiority in the field, if it is possible to do so.

From my observations I believe that as a whole, our competitors in the service parts business are filling an economic need and have earned their existence through the use of constructive marketing ideas, instead of through the commonly believed use of destructive marketing ideas.

As evidence of some of their constructive activities take the motion picture film entitled "Profitable Maintenance," their merchandising committee reports, and more recently the manual entitled "Standardized Practice of Accounting, Bookkeeping, and Stock Control and Their Relations to Business Administration." This manual contains all of the basic information required by their distribution functionaries and they have retained a nation-wide service organization to install it and follow it up for those who want it at a very nominal price.

While our competition has made considerable progress in this market on certain items, I believe that in their individual size lies their weakness as well as their strength. They are weak because the relatively small volume of the individual manufacturer does not permit intensive exploitation of the market, and results in highly competitive conditions among themselves. Their strength lies in the fact that they are small, which makes it possible for them to quickly adjust themselves to competitive conditions.

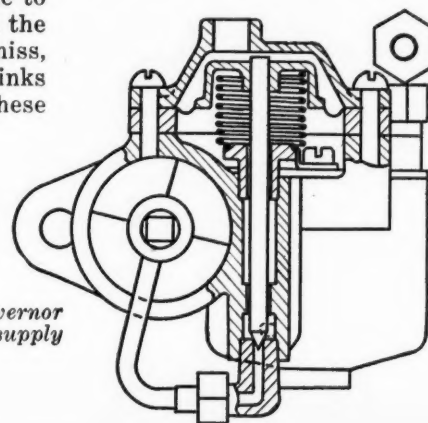
In dealing with the element of competition in the preparation of a marketing plan, it is well to bear in mind that the plan be directed to serve the market instead of fighting competition. If the element of competition is allowed too prominent a consideration, it will tend to keep the plan away from the main goal, and permit injecting a lot of little temporary measures resulting in petty patchwork instead of broad constructive measures needed to gain and hold the market. With such competition, we can only prosper in direct ratio with our qualities of excellence.

### Hydraulically Operated Governor

**A**n engine governor which acts on the fuel supply instead of on the mixture has been invented by Harry Stilz of Philadelphia. Referring to the sectioned drawing herewith, a needle valve is placed in the passage from the float chamber to the spray nozzle and is under the control of a diaphragm, the chamber of which communicates with the engine cooling system.

As the engine speeds up the pressure on the cooling water increases, and the resulting increased pressure on the diaphragm, acting against the pressure of a coiled spring, tends to close the fuel valve. The mixture is thereby impoverished and the power of the explosion decreased, which tends to reduce the speed.

An advantage of the governor is said to be that the carburetor may be set for the maximum-power mixture or rich mixture and the governor will then automatically reduce the richness of the mixture and ensure more economical running as the engine speeds up. Unfortunately, as the supply of fuel is cut down there is a tendency for the engine to "pop back" through the carburetor and to miss, but the inventor thinks he can overcome these faults.



Stilz engine governor  
acting on fuel supply



# Just Among Ourselves

## Interest in Automobile Shows is Increasing

NOBODY knows how many people go to automobile shows every year and pay money to see the new products of the industry, but there certainly is a vast army. The approximate figures on the two big national shows are known, of course, but totals for the scores of smaller exhibits throughout the country aren't available. A. V. Comings, secretary of the National Association of Automobile Shows and Association Managers, however, has just showed us some figures for 12 of the shows run by the 19 members of his association which give some idea of the growing—rather than diminishing—interest which is being displayed by the public in automobile exhibits.

\* \* \*

## One Person in Every 20 Goes

THESE 12 shows are so located as to be accessible to a population of some 18,000,000 people and the 1925 records indicate a little less than 1,000,000 people attended the exhibits. That means that about 1 person in every 20 went to an automobile show last year, if the record of the 12 cities can be accepted as typical. Of course, some very real effort in show promotion and advertising was necessary to attract these big crowds, but most of the shows are being handled now by men who are specialists in this sort of work and who manage to get pretty high rate of returns for promotion effort. Last year advertising and publicity expenditure for these 12 shows probably averaged about 10 cents per attendant; that is, for every 10 cents expended in advertising and publicity effort, one person came to the show. That seems like reasonably effective

advertising considering the total value of the sales made at these exhibitions.

\* \* \*

## Horses, Horses, Horses and Bicycles

THE fear that one form of transportation is going to supplant entirely a previously popular form is common to those interested in the older form in all ages, but quite frequently subsequent events prove those fears to be groundless. It is generally said, for example, that the automobile has replaced the horse and the bicycle almost entirely in this country. In a sense it has, but what it really has done is to provide individual transportation for thousands of people who would have "stayed put" if only horses or bicycles were available to them. For all our talk about "back in the days of the bicycle" and "long ago when we used horses," both of these means of transportation still are widely used. A survey of the Department of Agriculture shows that there are still 15,000,000 horses providing power for American farms, while many other horses, of course, still are in use. We haven't the figures on bicycles at hand, but unless we're very much mistaken there are many more bicycles in use today than there were back in 1895.

\* \* \*

## Fundamentally, We're All About the Same

THERE is so much specialization of activity today that we sometimes err in classifying men emotionally along the same lines as we do professionally. Superficially there is some reason in this. The type of man who really enjoys being a salesman will react quite differently to a particular idea or presentation than will the man whose honest pleasure lies in scientific

research. But fundamentally there isn't any such great difference in their personal desires and emotions. We are inclined to think of great research scientists as men whose sole joy is in the discovery of new things in the laboratory and to whom the applause or condemnation of the world at large means little or nothing. Yet some of the world's greatest scientists have been what in newspaper parlance is known as "publicity hounds." They were eager and glad to do the painstaking, careful work necessary to achieve their great discoveries, but having discovered, they wanted the world to recognize their achievement.

\* \* \*

## Pasteur Wanted Credit for His Achievements

OF the great Pasteur, for instance, Paul De Kruif in "Microbe Hunters" says, "His bristling, curious impudent air of challenge got him enemies. He had a way of putting 'am-I-not-clever-to-have-found-this-and-aren't-you-all-fools-not-to-believe-it-at-once?' between the lines of all his writings and speeches. He loved to fight with words, he had a cockney eagerness to get into an argument with everyone about everything." And of Spallanzani, who first proved that microbes must have parents, that, after completing a certain experiment which disproved a theory antagonistic to his, "Triumphant he shouted his last experiment to Europe, and Needham and Buffon heard it, and had to sit silent amid the ruins of their silly theory." In dealing with men and in trying to get from them their best efforts it usually is a mistake to assume that any executive or factory worker can be so entirely objective in his approach to his work as to be devoid of personal pride—and perhaps a bit of personal selfishness in connection with it. We're all human.—N. G. S.

## U. S. Exports of Cars, Trucks, Tires and Parts

COUNTRIES	GASOLINE PASSENGER CARS										TRUCKS					
	Up to \$500		\$500 to \$800		\$800 to \$1200		\$1200 to \$2000		Over \$2000		Up to 1 ton		1 to 2½ Tons		Over 2½ Tons	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
Austria			15	\$11,672	3	\$3,029	1	\$1,412			1	\$788				
Azores and Madeira Islands	7	\$2,928		602							4	2,134				
Belgium	432	224,609	101	77,237	262	282,332	26	38,540	14	\$40,298	432	151,736				
Bulgaria							1	1,505								
Czechoslovakia			10	7,472	6	7,467	2	3,173								
Denmark	1,052	451,124	267	212,909	48	50,213	11	17,708	3	10,713	288	98,244	3	\$5,984	1	\$2,138
Estonia																
Finland	6	2,860	111	80,858	69	71,617	15	21,203	4	11,621			8	12,173		
France			9	7,416	26	30,812	7	11,072	10	27,826	14	7,161				
Germany	59	21,450	228	160,736	141	151,567	16	25,735	31	79,613	244	80,170	4	3,549		
Gibraltar									1	2,500						
Greece			1	648	2	2,028										
Hungary	2	1,012	3	2,166												
Iceland and Faroe Islands	1	535	1	847												
Italy			1	735	7	7,418	1	1,513	1	2,500	100	24,855				
Latvia																
Lithuania			2	1,269												
Malta, Gozo and Cyprus			4	2,507	1	968										
Netherlands	1	500	93	70,435	95	110,854	46	69,753	19	53,443			1	850		
Norway	34	14,861	51	35,260	41	39,582	7	10,592	6	20,467	9	8,009	2	2,015		
Poland and Danzig	1	376														
Portugal	36	17,132	21	15,494	14	15,165	6	9,643	4	11,884	16	8,536	5	5,609	1	4,323
Rumania			15	11,908	40	44,283	4	7,265	2	5,790						
Russia	1	570	2	1,595					6	17,509						
Spain	28	13,624	77	56,528	114	123,984	62	96,605	28	75,981	69	36,568	29	34,343		
Sweden	1	350	298	216,960	270	281,258	30	45,232	8	20,931	22	16,759	34	41,666		
Switzerland			29	22,739	66	73,062	44	68,651	8	21,105						
Turkey					1	970					10	4,825				
United Kingdom	2	866	111	78,081	166	153,559	8	14,111	10	25,589	288	109,518	8	14,509		
Irish Free State			4	2,750							1	756	1	1,011		
Yugoslavia	23	10,979	15	11,027	7	7,422	3	4,603	1	2,500						
United States																
British Honduras	1	307														
Canada	353	102,625	3,104	1,870,709	1,361	1,348,595	387	564,717	153	430,891	101	94,777	288	336,079	34	131,115
Costa Rica			5	3,628	5	4,721	1	1,361			2	1,960				
Guatemala			8	6,523	17	19,309	9	12,801	2	4,855			17	29,957		
Honduras	5	2,018	1	606	1	937					1	441				
Nicaragua	1	210	5	3,514	5	6,061	1	1,334								
Panama	17	8,413	23	17,967	23	25,188	4	5,280	1	2,729	18	11,982	5	5,859		
Salvador			8	6,171	4	4,181			2	5,000			7	13,401		
Mexico	538	184,532	162	108,147	150	151,369	41	60,563	26	68,962	101	56,872	23	30,125	3	11,993
Miquelon																
Newfoundland	7	2,850	10	6,260	7	7,873	1	1,801	1	2,597	4	940				
Barbados	5	2,588	4	3,129	1	1,055	1	1,222								
Jamaica	8	3,084	20	13,221	6	6,290					26	9,633	2	2,288		
Trinidad and Tobago	4	1,912	8	5,150	4	3,885							2	2,084		
Other British West Indies	14	4,506	3	2,155	7	6,897	3	4,113			7	2,360				
Cuba	220	80,382	72	46,698	56	54,741	15	22,758	11	30,437	127	32,517	13	17,640	3	6,821
Dominican Republic	72	26,554	5	3,723	9	8,990	5	7,003			27	10,779	2	1,999		
Dutch West Indies	4	1,911	2	1,370	5	5,519			2		18	6,714	4	6,700		
French West Indies																
Haiti			10	7,317	6	5,049							4	7,026	1	5,290
Virgin Islands	3	1,322	2	1,517							1	458				
Argentina	396	187,675	683	473,457	188	212,281	81	132,857	35	110,397	345	126,699	17	24,169	14	48,495
Bolivia			3	2,234	11	12,722	11	1,332	2	5,295	3	2,693	11	18,615		
Brazil	768	290,947	286	208,463	175	182,240	48	70,449	37	99,874	768	266,137	13	14,379	2	13,670
Chile	11	5,791	21	15,862	6	6,340	2	3,198	2	5,883	23	18,708	21	25,729	8	27,370
Colombia	41	15,184	37	27,388	45	45,691	13	21,588	3	9,610	21	10,194	665	64,707	4	6,970
Ecuador	8	3,136			6	6,065	5	7,515								
British Guiana			1	626	1	1,053							2	2,094		
French Guiana																
Dutch Guiana	3	1,112														
Paraguay	5	1,880														
Peru	27	11,070	27	18,934	17	16,399	3	5,082	2	4,525	42	26,717	28	45,449		
Uruguay	86	28,480	39	31,130	43	46,817	15	22,658	1	3,124					2	4,919
Venezuela	21	8,351	32	25,311	96	95,130	6	8,883	7	17,583	75	30,616	18	17,587	6	21,617
Aden	6	3,175														
British India	34	15,939	144	108,555	87	95,235	7	10,869			99	70,074	12	14,119		
Ceylon	41	19,443	35	26,136	17	17,106	4	5,264	1	3,409	44	33,986	19	25,243	1	2,320
Straits Settlements			23	17,038	29	28,868	1	1,388			2	1,456	6	8,233		
China	81	27,209	59	46,585	18	17,288	13	19,804			58	23,806	9	12,823		
Java and Madura	41	19,813	89	64,752	73	76,471	8	11,608	4	10,067						
Other Dutch East Indies	6	2,646	22	16,274	11	11,593							9	9,498		
French Indo China																
Hejaz, Arabia and Iraq	25	9,360	7	4,782	9	9,221	1	1,519								
Hongkong	12	4,436			5	4,262					10	4,040				
Japan	40	14,093	37	28,671	71	68,777	11	17,915	22	56,601	4	2,500			3	8,268
Kwangtung			13	9,048			1	1,339					2	3,604		
Palestine and Syria	60	22,560	24	17,249	26	25,807	7	11,095			5	3,651				
Persia	21	7,488			2	1,807										
Philippine Islands	167	54,220	75	58,419	67	70,739	17	24,227	5	12,480	100	34,596	8	10,093		
Siam	2	960														
Turkey	25	12,125									12	6,402				
Australia	952	366,106	994	637,785	840	896,709	79	124,133	82	215,130	883	480,122	117	156,380	65	187,247
New Zealand	163	76,141	94	73,908	309	345,653	20	34,005	11	28,73						



# for May, 1926

# Canadian Exports

ELECTRIC VEHICLES		PARTS	TIRES						PASSENGER CARS						TRUCKS		PARTS	COUNTRIES
			Casings		Inners		Solids		Up to \$500		\$500 to \$1000		Over \$1000					
No.	Value	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	Value	
		\$1,334	440	\$12,250	323	\$1,386			21	\$6,941					20	\$6,880	20	Austria
		1,547	105	1,628	132	317												Azores and Madeira Islands
		56,377	2,049	72,450	640	4,013							2	3,085			17,789	Belgium
		254													8	3,511		Bulgaria
		5,093	918	22,553	657	2,384	130	5,282										Czechoslovakia
		167,458	1,625	26,089	2,974	5,455	58	1,895					18	22,256			11,293	Denmark
		245																Estonia
		18,210	1,234	29,878	1,123	3,249												Finland
		43,628	1,222	42,860	454	2,831												France
		40,752	12,776	324,067	12,214	49,619	2	200									6	Germany
		2																Gibraltar
		3,272	407	9,591	20	52	24	834										Greece
		200	129	3,057	116	510											102	Hungary
		297																Iceland and Faroe Islands
		134,075	390	10,752	157	673					2	\$1,798					25	Italy
		409	74	1,925	38	150												Latvia
		467																Lithuania
		763	6	80	9	18			1	316								Malta, Gozo and Cyprus
		49,840	2,501	57,580	2,267	7,435	96	3,643										Netherlands
		9,506	2,000	43,610	1,492	4,071	47	3,679	7	2,667	11	7,396	6	7,408			1	Norway
		1,163	191	4,388	31	100												Poland and Danzig
		12,985	407	5,453	106	315												Portugal
		7,075							44	18,498	5	3,390	3	4,025				Rumania
		2,317			4	23												Russia
		37,158	4,295	76,831	3,010	9,416	57	2,175	6	2,645					10	4,795		Spain
		65,877	2,228	43,726	1,856	5,230	4	65									4	Sweden
		13,961	1,528	58,468	806	3,634	135	5,350										Switzerland
		3,082									1	916	1	1,249				Turkey
		285,151	5,774	128,726	3,345	9,904	910	21,540	2	950	36	34,423	46	53,540	2	4,574	78,608	United Kingdom
		42,111	169	1,839	241	617											2,971	Irish Free State
		625	593	11,153	341	1,120	20	363	6	2,551	1	903						Yugoslavia
									16	2,915	1	600					37,031	United States
2	5,968	3,763,108	694	16,413	1,142	3,131	90	3,066										British Honduras
		2,906	251	6,870	162	633				830	4	3,093			4	1,755	70	Canada
		10,353	547	13,925	787	3,309			2	829			2	2,420	4	1,755		Costa Rica
		3,154	144	3,571	191	705	17	1,205									4	Guatemala
		884	30	493	48	102											13	Honduras
		7,78	349	7,278	971	3,419	28	956			2	1,768	5	6,048			81	Nicaragua
		8,783	267	5,931	222	1,249	22	729										Panama
2	\$925	124,138	3,191	55,142	3,828	8,375	64	3,748			6	4,974					6	Salvador
																	26	Mexico
		1,739	285	4,276	284	6											577	Miquelon
		4,811	49	659	47	127			2	600								Newfoundland
		17,367	38	736	30	3	73	1,903	24	10,215					4	1,755	81	Barbados
		4,231	63	2,345	55	325			12	4,233	2	1,548			16	5,264	7	Jamaica
		6,723	93	1,811	28	70	6	19	1	421							85	Trinidad and Tobago
		94,960	9,373	137,680	6,659	14,464	254	13,520	3	1,134	4	3,581	7	8,577			377	Other British West Indies
		15,091	84	6,776	475	1,245	70	2,425	3		3	2,638	1	1,210			39	Cuba
		2,712	173	3,007	173	515			2	805					4	755		Dominican Republic
		1,032	195	3,199	30	161			2	805								Dutch West Indies
		3,036	185	5,788	165	698			9	3,584					12	5,267		French West Indies
		1,014	47	445	3	9												Haiti
		477,148	16,152	252,685	15,533	42,927	956	53,069			94	59,982					3,233	Virgin Islands
		5,372	88	2,288	42	145							4	4,834	24	10,531		Argentina
		160,525	3,562	38,010	3,181	5,622	541	13,427			28	24,200	10	12,127			28,062	Bolivia
		54,243	1,534	24,162	2,124	5,480	182	12,928	1	431	3	1,947			8	3,511	5	Brazil
		53,614	1,022	27,400	1,326	6,143	4	255	14	5,966	6	5,027	7	8,828	14	6,713	263	Chile
		3,420	259	5,844	344	1,217							3	3,00	2		49	Colombia
		547	2	23					2	888					2	584	297	Ecuador
		565					4	79										British Guiana
		80	3	85	2	9												French Guiana
		926							12	5,332	1							Dutch Guiana
		40,546	1,098	36,170	1,298	6,321	38	2,136	2	863			3	4,054	28	13,019		Paraguay
		25,004	4,165	71,751	6,265	13,057	188	12,565	11	7,938	5	6,960					19	Peru
		27,533	2,190	61,105	3,153	8,883	29	5,97	20	8,046	5	4,027	3	3,629	10	30,718		Uruguay
		322	29	493	37	123	6	187	9	2,974					6	2,168		Venezuela
		102,969	1,498	24,386	558	1,901	92	2,997	327	126,245	46	33,772	2	2,012	312	128,516	38,600	Aden
		13,474	532	12,684	344	1,575	65	2,520	62	23,445	18	13,685	1	1,217			20,218	British India
		34,378	1,443	22,755	504	1,387	145	5,444	252	84,306	4	3,945			124	43,301	30,907	Ceylon
		18,508	15,565	26,119	2,438	6,042	108	3,777	26	11,431	18	16,773	13	16,146			1,059	Straits Settlements
		28,693	2,591	37,637	702	2,366	9	685	252	92,682	51	39,763	9	10,747	207	68,820	28,096	China
		11,838	55	2,0	30	90												Java and Madura
		84	30	811	24	154												Other Dutch East Indies
		5,614	675	11,098	458	1,225			28	11,019	6	3,903			4	1,486		French Indo China
		4,054					12	365									195	Hejaz, Arabia and Iraq
		269,785	4,081	54,285	2,948	6,840	188	7,885	27	11,094	14	12,646	12	14,999	42	18,323	680	Hongkong
		769																Japan
		7,679	712	15,705	138	725			13	5,414	4	3,368			2	959		Kwangtung
		1,804	127	2,092					3	1,248								Palestina and Syria
		36,949	1,403	23,967,														

# Guggenheim Competition *will* Stimulate Interest in Aeronautics

Aircraft builders and designers from all countries will be invited to participate in event which is planned to promote greater safety in air transportation.



FRESH interest in the development of aviation will be stimulated by the action of the Daniel Guggenheim Fund for the Promotion of Aeronautics in deciding to organize an open international aircraft competition, for which the trustees will probably appropriate between \$150,000 and \$200,000 to make

the event—which will be held in this country under rules to be framed by experts from many countries—attractive to the best designers and manufacturers of aircraft throughout the world.

Since Daniel Guggenheim placed \$2,500,000 at the board of trustees' disposal the members have been studying the manner in which the fund might best be used for the fundamental advancement of aviation as an art and science. The board has concluded that its primary energies should be directed toward the promotion of ways and means to secure maximum safety in flying and on the theory that the success of commercial aviation will be assured the day that the public can be convinced, not by statistics, but by actual demonstration, that airplanes are inherently no more dangerous than steamships or railroads.

From fundamental research work now in progress and from the construction of some new types of airplanes involving a number of radical aero-dynamic departures from the conventional airplane, sufficient progress has already been made in the direction of safety to justify faith that a complete solution of this problem is possible and that it may even be very near at hand. Indeed, flying today is actually much safer than it is generally assumed to be.

## Industry Financially Weak

Due to the weak financial status of the infant airplane industry in all parts of the world, manufacturers are financially unable to develop, on their own initiative, types that have not a definite commercial value. This restricts development for the most part to war types. Governments at the present day are almost the sole buyers of airplanes. Some orders, to be sure, are placed for commercial planes to operate over government subsidized air routes in Europe and for our newly organized mail routes in America, but this demand is insignificant in comparison with the military demand.

Such commercial planes as are made are naturally an adaptation by the manufacturers of military types to meet commercial needs. The aerial transport companies are unable to devote primary attention to designing a safe plan.

The chief problem in promoting safety in flying, according to the board, may be thus stated:

Today, when the speed of the conventional airplane

is reduced below its so-called "stalling speed," it ceases to function like an airplane. If the airplane is flying at sufficient altitude and is aerodynamically well constructed, the pilot may recover from the "stall" and regain control. However, should the stall occur in leaving the ground, the cause of a great number of accidents, a crash is inevitable.

## Accidents in Landing

In a like manner in forced landings, crashes are commonly due to the speed necessary to avoid a stall in attempting to fly over some object adjacent to a closely confined place chosen for the landing or in landing on uneven or closely confined ground.

Major R. H. Mayo, consulting engineer and representative of the Guggenheim fund in England, has summarized as follows the essential characteristics of the present-day airplane which make the development of the safety factor necessary:

- (1) The landing speed is too high and the length of run after landing is too great.
- (2) The gliding angle is too flat, making the approach to a given spot for landing too difficult.
- (3) The length of run required before taking off is too great.
- (4) The angle of ascent after taking off is not great enough.
- (5) If the aeroplane is stalled, it become unstable and at the same time control is lost.

In addition to the International Competition, details of which will be announced from time to time, the trustees have authorized its officers to make a careful investigation and prepare further specific recommendations working toward:

- (1) The encouragement of the perfection of flying instruments and accessories with particular regard to the perfection of radio or other aids to navigation and the control for fog flying.
- (2) The encouragement of research in aerology.
- (3) The encouragement of development of means to prevent collision.
- (4) The encouragement of development of aircraft with motor accessible in flight.
- (5) The encouragement of development of fire and splinter-proof fusilage.

The board of trustees consists of: H. I. Cone, F. Tru-  
bee Davison, W. F. Durand, George W. Goethals, Harry  
F. Guggenheim, A. A. Michelson, Dwight W. Morrow,  
Elihu Root, Jr., John D. Ryan and Orville Wright.



# EDITORIAL

## *Troubles of Law Abiding*

**T**HERE'S plenty of discussion about reckless motorists but not nearly enough about the difficulties placed in the way of the motorists whose chief desire is to be law abiding. Lack of uniformity in traffic laws and extremely low speed limits in many towns are among the commonest hindrances to law abiding.

An unusually experienced motorist who has successfully completed several memory courses might be able to remember with the necessary rapidity where you turn left on the red, where you go to the right and where you go to the left when you wish to turn left, what color signal means this and what color means that as he journeys from state to state, from town to town, or from street corner to street corner, for even within cities uniformity sometimes does not exist as regards these and other traffic regulations. But to the average well-meaning automobile driver while touring away from his home bailiwick these things continue to be about one-third a matter of knowledge, one-third of common sense, and one-third of pure chance.

As regards observation of speed laws, he is only a little better off. While traveling along a broad highway running through a small town he is constantly admonished to slow down to 12 or 15 miles per hour, a rate so slow as to be almost silly in most cases in addition to being inefficient under modern conditions of highways, of motor vehicle construction and general driving conditions. Speed limits undoubtedly are necessary, but they should be set at a speed which is likely to be enforceable in a majority of cases. The changed conditions of modern transportation have been recognized in many instances by State authorities in setting open highway speeds, but the changes wrought by time still go unrecognized in this regard in most villages along the way.

## *Wanted—a Name*

**W**HEN the paint industry developed the cellulose finishes now in such extensive use it was too busy to develop simultaneously a short descriptive name for the new product but borrowed one which has been used for centuries to describe a quite different paint product. The term "lacquer" has become almost synonymous with "pyroxylin finish," in the automotive industry at least, yet one may well wonder why it should have been chosen.

The word "lacquer" is derived from a Hindustani word "lakh" meaning "an hundred thousand" and referring to the innumerable insects whose secretions formed the basis of the original "lacquers" and are

now used as the basis for commercial shellac. Later "lacquer" came to mean any resin base varnish, a solution of shellac in alcohol, or, specifically, the natural varnish obtained from the varnish tree of Japan.

All of these "lacquers" were typical varnish products with none of the physical or chemical characteristics of pyroxylin finishes save that of drying quicker than other types of finish. The "lacquers" were used almost exclusively for protection and decoration of objects which would not be subjected to the weather, since the film had a tendency to soften in warm weather and to crack in cold; it lacked resistance to abrasion and the sun's rays and water was likely to whiten and ruin it.

The term "lacquer" does not appear to be very well adapted to its present use although custom may quickly eliminate all cause for confusion. One wonders, however, if it might not have been better to have taken a leaf from the book of the artificial silk industry—a product very similar to pyroxylin finishes—and introduce a distinctive name for the type of finish which is based upon a solution of nitrated cotton.

## *Automobile Advertising*

**E**THICS can't be legislated but principles can be laid down which, backed by the particular public opinion related to the question, will furnish a sound basis for procedure. This latter method has been employed in the five constructive recommendations regarding automobile advertising copy which have just been made by the members and advertising managers of the National Automobile Chamber of Commerce.

The recommendations emphasize in general the idea that advertising copy should devote itself chiefly to the merits and uses of a particular product and that it should give relatively little attention to propounding the alleged demerits of other products. Specifically the recommendations—which are printed fully in the news pages of this issue—suggest that names of competitors be not mentioned without the latter's consent; that no advertising contain statements based on confidential N.A.C.C. production reports; that no statement derogatory to a competitor be made; that advertising cross country runs involving illegal speeds is inadvisable; and that fear appeal advertising is inadvisable.

A month or so ago we questioned the publicity value of speed runs on the open road and pointed out the possibility of unfavorable as well as favorable results accruing. This opinion is confirmed in a general way by the N.A.C.C. recommendations.

# AUTOMOTIVE **NEWS SECTION** INDUSTRIES

Philadelphia, Pennsylvania

Thursday, July 8, 1926

## Production at Mid-Year Rate; Retail Sales Continue High

PHILADELPHIA, July 7—Rate of general automobile production continues to show the effect of the changeover occasioned by preparation for fall presentations. It is not to be expected that the production rate for this month or the next will approximate the heavy production months preceding largely because of this. Most of the inactivity will be centered in July with August showing gradually speeded pace as work on the fall products gets under headway.

Though new presentations will not be made by all companies, sufficient new designs will be shown to stimulate interest in all automotive lines. Factories not making general changes will freshen their lines by using new color combinations and on the whole the fall market will find the industry just as able to command public interest as it ever has been.

Continuing warm weather throughout the country has brought the retail market for many items of car equipment and replacement to its best point of the year. Similarly it has greatly stimulated the demand for used cars. New cars though continuing in large demand have for the present been relegated to less important position by the business in used cars, tires and replacement parts. The tire industry believes that it is now safely past the depression which has affected its replacement business since early year.

Promise of good crop conditions again is directing the thoughts of the industry to the extent of the fall farm market. Increased car business is indicated throughout the western and southern districts while demand for general products from these sections is expected to maintain the large buying in the industrial regions.

### Car Manufacturing Centers Show Large Sales Gains

DETROIT, July 6—Sale of passenger cars in Michigan, for May, were 25,152 compared with 24,321 units for May of a year ago. Car sales for the first five months were 87,269, a substantial gain over the same period in 1925 when 66,871 units were sold.

Wayne County, which includes Greater Detroit, was the only large automobile manufacturing center in the State to show a decrease in car sales. Sales totaled 10,444 compared with 11,246 a year ago. Business in Wayne during the first five months showed a gain, however, over a year ago. Sales were 37,166 compared with 33,842 a year ago.

Genesee County, which includes Flint, had sales totaling 978 in May while a year ago they were 765. Sales for the first five months were 3486 and in 1925

were 1649. Ingham County, which embraces Lansing, bought 842 cars compared with 343 in 1925. During the first five months, Ingham sales aggregated 3063 compared with 1901 a year ago. Oakland County, which includes Pontiac, registered 1202 sales compared with 858 a year ago. Oakland sales for the first five months were 4083 compared with 2646.

### Dodge Gains 52,669 in First 6 Months

DETROIT, July 6—Dodge Brothers, Inc., dealers in the United States set a new high record the first six months of this year when they delivered 173,373 passenger cars and trucks. This constitutes a gain of 52,669 vehicles or 43.6 per cent over the deliveries for the first half of 1925.

Incomplete figures for Canada indicate that the gain in retail deliveries by Dodge dealers approximates 65 per cent.

Dodge and Graham shipments during the first six months of this year were 207,115, a gain of 68,345 or 49.3 per cent over the same period of 1925.

No summer shut down will be effected by Dodge Brothers, Inc. for inventory or employees' vacation. The night force is being eliminated and part of the employees transferred to the day shift. Production is averaging about 1,250 cars a day compared with highest production attained last year of 1,100.

### French Grand Prix Run With 3 Cars Starting

PARIS, June 28 (by mail)—Jules Goux, driving a 91½ in. supercharged Bugatti, won the French Grand Prix on Miramas track, yesterday, at an average speed of 68 miles an hour, for a distance of 300 miles. Instituted in 1906, the French Grand Prix has been recognized for the past twenty years as the most important speed contest in Europe. This year only twelve entries were secured, but Delage, Talbot and Sima-Violet were unable to be ready in time, with the re-

sult that the three Bugattis were the only ones to face the starter.

In an attempt to save this race from entire failure, a speed contest for 67½ in. and smaller racing cars was put on the program. Keen competition was expected between the six-cylinder roller-bearing super-charged Amilcars and the four-cylinder Salmsons, but the former, after setting a fast pace, were all retired with broken valve springs. Casse, driving a four-year-old Salmson, won at 65 miles an hour.

On account of the failure of the French Grand Prix, the leading racing events of the year will be the European Grand Prix at San Sebastian, on July 18, and the Italian Grand Prix at Monza, Italy, on Sept. 6.

### \$10,000,000 Fiat Bonds Sold by Morgan Interests Here

NEW YORK, July 7—What is believed to be the first public financing plan in the United States of a foreign automobile manufacturer was the floating this week of \$10,000,000 of Fiat Co. 20 year sinking fund, 7 per cent, debenture bonds by a syndicate of American bankers headed by J. P. Morgan & Co.

As the Morgan interests are bankers for General Motors Corp., there were rumors current in Wall Street that the offering implied some form of alliance between G. M. and Fiat but the reports were authoritatively denied.

The purpose of the issue is to supply funds for expansion of the Lingotto Works, chiefly in connection with the production of a new car selling for the equivalent of \$635, for reimbursement of the treasury for similar expenditures already made and to provide the company with additional working capital.

The bonds carry detachable stock purchase warrants, entitling holders to purchase fully paid capital stock of the company at \$25 a share. A sinking fund is established to redeem the entire issue either on or before maturity and will be applied to the purchase of the bonds, if obtainable, at or below 105 per cent; or, if not so obtainable, to be semi-annual redemption at 105 per cent of bonds called by lot. They are offered at 93 per cent and accrued interest to yield 7.69 per cent to maturity.

### Hupp Declares Dividend

DETROIT, July 3—The Hupp Motor Car Co., which has been breaking production records, this year, has declared the regular quarterly dividend of 25 cents payable Aug. 1 to stock of record July 15.

In May the company shipped 4989 units, a gain of 45 per cent over a year ago when 2636 cars were produced.



## 3 Months' Orders in on New Chrysler 50

Original Estimates to be Increased—First Half Shows  
34½% Gain

NEW YORK, July 7—During the first half of the year, Chrysler Corp. produced 76,773 cars, a gain of 34½ per cent over the corresponding period in 1925 when production totaled 57,161, it was made known today when Chrysler production figures of 15,232 for June were announced.

Production during last six months of 1925 was 80,670 and this year's schedule calls for 101,612, an increase of 26 per cent.

In connection with the production announcement, Walter P. Chrysler, president, said:

"Distributors and dealers have on hand less than three weeks' supply of cars. The corporation has 3749 points of business contact through distributors, dealers, associate dealers and the like. On April 20 the first shipments of the model 60, the new light six, were made. During the 60 days following, 18,000 were bought by the public.

"We have advised our distributing organization we intend to produce a new light four-cylinder model, the "50." While no announcement concerning mechanism details have been made, we have on our books orders for three months in excess of what we originally planned to produce of this model during the remainder of the year and consequently our production schedule will have to be increased."

## Packard Dividend Brings Capital to \$30,000,000

DETROIT, July 7—Declaration by Packard Motor Car Co. of an extra 50 cents cash dividend payable July 31, and a 15 per cent stock dividend payable Aug. 31, will mean the distribution of \$1,309,361 in cash and an increase of its capital stock outstanding to 3,006,930 shares.

Coincidental with the declaration of the extra dividends, the company changed its dividends to a monthly basis, and fixed this on the new capitalization as 2 per cent for the months of September, October and November.

Under the new dividend rate the company will pay approximately \$600,000 a month. Formerly it paid approximately \$462,600 monthly under its regular rate.

## Cleveland Welding Starts as Independent Company

CLEVELAND, July 8—Announcement is made by the Cleveland Welding Co. of its formation as an independent company, it formerly being the Cleveland Welding & Mfg. Co. of the Hydraulic Steel Co. The same personnel formerly directing the company has assumed complete and independent responsibility.

The company manufactures rims, steel base bands, gear ring forgings and other welded steel products.

Officers of the company are H. W. Kranz, president and general manager; C. S. Holden, vice-president and sales manager, and A. F. Mellman, secretary and treasurer.

## Peugeot Builds Electrics, Would Cut Gasoline Use

PARIS, June 30 (by mail)—Peugeot has gone into construction on three types of electric vehicles, comprising a 2000 lb. truck, a taxicab and a light sedan. These vehicles are being built under Krieger patents and are types which have been in service for a long time, the only modifications adopted by Peugeot being the use of a false radiator and hood so as to give the electrics the same external appearance as their gasoline vehicles.

With the depreciation in the value of the franc and the important developments taking place in the production of electricity from water power in the French Alps, the outlook is favorable for the electric vehicle. Lucien Rosengart, vice-president of the Peugeot company maintains that gasoline imports could be reduced by 15,000,000 gal. a year by the use of electrics for city service. It is understood that Peugeot intends to develop the sales of electrics in France and to put electric taxicabs into service in Paris.

## British to Use Curtiss

NEW YORK, July 8—The British government has standardized on Curtiss D-12 engines for pursuit and observation planes, according to statement by the Curtiss Aeroplane & Motor Co. This action was taken after competition in which many British and Continental engines were entered. Deliveries are to be made at the rate of 6 engines monthly under a contract now effective. Later the engines will be made by the Fairey Aviation Co. in England under royalty.

## Morris Motors Reorganizes

NEW YORK, July 8—Morris Motors, important British car manufacturer, is to reorganize with a capital of £5,000,000, dividend into £3,000,000 in 7½ per cent cumulative preferred stock and £2,000,000 in ordinary shares, the offering to be made publicly according to advices received here.

The company was organized in 1912 by W. R. Morris and has specialized in the manufacture of low-priced cars.

## Moon Light 6 Nearing

ST. LOUIS, July 7—Directors of Moon Motor Car Co. have declared the regular quarterly dividend of 75 cents a share payable Aug. 2 to stock of July 15 record. It is the fortieth consecutive dividend that the company has paid, since March 31, 1923, applying on common stock only. The company will start production in two weeks on its new light six selling for \$995.

## Business in Brief

Written exclusively for AUTOMOTIVE INDUSTRIES by the Guaranty Trust Co., second largest bank in America.

NEW YORK, July 8—Real summer weather and vacation-needs purchasing combined to stimulate retail trade last week. Continued improvement in the crop outlook, resulting from further precipitation, no doubt increased buying in the rural districts. The level of commodity prices remained practically constant, while stock prices made a distinct advance.

### CAR LOADINGS

Car loadings for the week ended June 19 totaled 1,043,720, as compared with 1,060,214 in the preceding week and 984,583 during the corresponding period last year.

Department store sales in the New York district during May were 6 per cent larger than last year and chain store sales showed an increase of 18 per cent, but the figures of wholesale trade in this district during May were 6 per cent below those of the corresponding month last year.

### BASIC INDUSTRIES

A comprehensive survey, covering the last two weeks in June, made by the National Association of Manufacturers disclosed that basic industry throughout the country was operating at 84 per cent of its maximum employment capacity.

### MAIL ORDER SALES

The June sales of Sears, Roebuck & Co. amounted to \$18,274,895 as against \$16,095,102 in June, 1925, which represents an increase of 13.5 per cent. The sales for June reported by F. & W. Grand 5-10-25 Cent Stores and J. C. Penney Co., Inc., showed gains of 22.3 per cent and 29.21 per cent, respectively, over the sales for the corresponding month last year.

### BANK DEBITS

Bank debits to individual accounts reported to the Federal Reserve Board for the week ended June 30 were 2.7 per cent above the total for the preceding week and about 1 per cent below that of a year ago.

### FISHER'S INDEX

Fisher's index of wholesale commodity prices remained unchanged last week at 152, as against 151.8 four weeks earlier.

### FEDERAL RESERVE STATEMENT

Bills and securities held by the Federal Reserve banks increased \$39,000,000 during the week ended June 30, with gains of \$35,900,000 in discounts, \$2,200,000 in open market purchases and \$2,200,000 in Government securities. Note circulation rose \$14,500,000 and deposits \$1,600,000 while reserves declined \$15,900,000.

Call loan rates ranged from 4½ to 5 per cent last week, as against 4 to 4½ per cent a week earlier. Time loan rates remained unchanged at 4½ to 4¾ per cent. Rates on commercial paper continued to be quoted at 3¾ to 4 per cent.

## Flint to Continue in Leased Factory

Branches of the Company Being  
Discontinued—Represented  
\$5,500,000 Investment

FLINT, July 6—Under plans of Flint Motor Co. as revealed at the adjourned stockholders' meeting of July 1, it is proposed to remove manufacturing operations on the Flint line of cars to another Durant unit, probably at Lansing or Muncie, Ind., where space would be leased from the Durant organization. Under plans for operation as outlined by R. H. Mulch, president and general manager, sales of the company would follow regular channels of distribution, company branches being discontinued.

The company has had \$5,500,000 invested in 64 branches in as many cities throughout the country. These are being done away with, Mr. Mulch said, and already 58 of them have been closed. He added that the company has been greatly over-organized in its entirety.

The meeting on July 1 at which action was to be taken on the proposed sale to General Motors Corp. of the properties in the city of Flint failed to attract sufficient shares to vote the sale. There are 805,390 shares outstanding, 75 per cent of which must be voted favorably. The meeting brought together 300 shareholders representing 548,944 shares.

## Lamson & Sessions and Kirk-Latty in Combine

CLEVELAND, July 8—Frank G. Chase, chairman of the Lamson & Sessions Co., one of the largest bolt, nut and rivet manufacturers for the automotive trade, has been reelected to that office following the recent merger of the Lamson & Sessions Co. with the Kirk-Latty Mfg. Co.

John G. Jennings, president of the Lamson & Sessions Co. has been made president of the combined companies.

George S. Case, formerly treasurer and general manager is first vice-president and chairman of the executive committee. Roy H. Smith, vice-president has been made vice-president and director of operations and I. Lamson Jennings, secretary, sales manager and vice-president.

Fred H. McIsaac, formerly president of the Kirk-Latty company is now secretary and treasurer of the merged companies.

## Increase Louisiana Tax

NEW ORLEANS, July 8—A bill providing for 2 cents additional tax on gasoline has been passed by the house at Baton Rouge. Except for New Orleans, the 1 cent gasoline tax to go to the parishes will be allotted on the basis of highway mileage. The one-fifth of the total revenues from the 1 cent tax to New Orleans is dedicated to paving purposes.

## TRUCKS AND BUSES IN NORTHWEST TOUR

SEATTLE, July 2—With Seattle as a starting point, the Yellow Truck & Coach Mfg. Co., this week launched a motor caravan unique in Pacific Northwest. This assembly of G.M.C. trucks and Yellow trucks and coaches will tour Washington and northern Idaho in a three weeks demonstration. The five models being featured are the new one-ton Yellow Knight "Money Maker," the model "X" 17 equipped with camp body originally designed for the Sportsmen's Show in Seattle; the model K-52, two-and-one-half ton G.M.C. chassis and the K-102 G.M.C. "Big Brute."

## Better Crop Conditions Help Business in Iowa

DES MOINES, July 3—Better crop conditions in Iowa allowed car dealers serving rural districts to turn in respectable volumes during June. This in spite of the fact that July 1 marks the date of the reduction in license fees, a condition which usually slows up car sales during the latter part of June. Used car stocks are turning fairly well, but are larger than those of a month ago.

Jobbers of automotive supplies and equipment report improved business during June. Sales are confined, for the most part, to staple accessories and supplies. Dealers are not buying liberally, being conservative in the size of their orders and slow to stock specialties. Replacement parts and shop equipment are in good demand. Tire sales have been satisfactory and the battery and electrical business has shown improvement.

Truck sales are about equal with those for the first half of last year. The demand this year has been for the smaller sizes of trucks. This trend is accounted for, in part, by the lack of construction work in the State. The equipment of many contractors is idle, thus restricting the market for the larger sizes of trucks.

## N. C. Registers 325,000 Cars

RALEIGH, N. C., July 8—Approximately 325,000 motor vehicles were registered in North Carolina as of July 1, with 10 days remaining for registration without penalty, according to an announcement from the office here of State Revenue Commissioner Doughton. The commissioner said this registration offers evidence that his estimate of 400,000 cars being registered in the course of the fiscal year will be made good.

## N. J. Sales Gain 15,640

NEW YORK, July 6—May sales of new cars in New Jersey were 13,406 units compared with 14,361 in April this year and 9204 in May last year, according to Sherlock & Arnold. For the past five months this year new car sales were 50,790, an increase of 15,640 or 44 per cent over the same period in 1925.

## Long Beach to Get Ford Assembly Plant

Los Angeles Location to be  
Abandoned for New Unit  
on Ocean Front

LOS ANGELES, July 6—Ford Motor Co. will soon start the erection of a new and larger assembly plant at Long Beach, which is expected to be one of the most modern establishments of its kind in the Ford chain. When the new plant is established, the Los Angeles factory branch will be abandoned, as the entire Southern California territory will be served from Long Beach, which is developing excellent harbor facilities, being located directly on the ocean.

The Ford interests have been negotiating for several months with the municipal authorities of Long Beach for certain additional harbor development work to make feasible the establishment of the proposed big factory. The city of Long Beach has acceded to the Ford demands, and the transaction is now understood to be definitely closed.

The new plant is expected to cover not less than 350,000 sq. ft. on a forty acre site selected by Ford representatives on lands of the Union Pacific railroad.

## New Cletrac Model Ready; \$100 Reduction on Model K

CLEVELAND, July 8—Cleveland Tractor Co. announces that it will go into regular production on its new model A Cletrac about July 15. This tractor adheres closely to all principles of the former models except that it has a six-cylinder motor instead of the four, is larger and has greater capacity. The "Snap" oiling system copyrighted by the Cleveland Tractor Co. will also be featured in the new model.

The model K has been reduced in price from \$1875 to \$1775.

The factory has adopted the policy of giving as many of the employees as possible their vacations at the same time. To bring this about all employees of the Cleveland plant not actually required to keep the plant running were released for two weeks beginning with the close of business July 3.

## Oshkosh Truck Reorganizes

OSHKOSH, WIS., July 2—Plans for reorganizing the Oshkosh Motor Truck Co., manufacturer of quadruple drive commercial vehicles, were approved at a meeting of stockholders attended by 80 per cent of the members of the corporation. The form of reorganization contemplated is that the company take over the present stock and issue new stock in exchange for it, subject to the bond issue. While the Oshkosh company has been in production without serious interruption, it has not been able to take advantage of the increasingly active commercial car market.



## Parliament Closing Kills Tax Revision

Failure of Ratification Complicates Canadian Situation for Dealers

MONTREAL, July 6—The automobile business, which already complained of being badly buffeted by the budget, is again the main sufferer from the trick of fortune by which a number of taxation changes which followed on the last budget go into the discard because dissolution of Parliament came before they had been ratified. One of the most outstanding of these was the remission of the 5 per cent sales tax on passenger automobiles under \$1200 in value produced 40 per cent in Canada.

When this passed prices were at once reduced correspondingly by most of the houses which advertised "Delivered in Montreal" prices. Interviews with a number of the leading automobile houses in Montreal showed that a great many cars have been sold at the reduced rate. The tax can no longer be collected, and it must be paid. As one of the leading vendors of low priced cars in Montreal expressed it:

"Once a man has taken delivery of a car at a certain price, you can hardly hope to collect any more than the original price from him. Of course, most of us in the automobile trade here have obtained the assurance of the remission, or a fixed tax paid price, from the manufacturers. So probably we can come back on the manufacturer, and make him stand the loss. But one thing is sure, someone in the trade has got to lose that 5 per cent, or at least, be out that money until such time as he can get the Government to recompense him.

"Many cheaper cars are sold on extended payments, with comparatively small instalments. The reduction in prices, coinciding with the opening of the season, formed together a powerful selling argument, and the automobile salesmen have made the most of it. According to many of the firms handling these cars sales have been heavy. Even if the man has only paid \$5 down on his car, if he has a contract for the sale of it, you can't go after him for the sales tax afterward," another of the Montreal automobile men remarked.

Still another commented that while some dealers bought f. o. b. at the works and had to stand subsequent taxes and other expenses themselves, others would be able to pass the sales tax on to the manufacturer.

### Atwater Kent Wins Claim

PHILADELPHIA, July 3—Atwater Kent Mfg. Co. will recover \$97,140 paid as excise tax on timers and coils manufactured by it, under a decision handed down by the Court of Claims of the United States. The case involved the question of whether timers and coils came within the meaning of section 900 of the

revenue act of 1918 and 1921, covering the manufacture of automobile trucks and wagons, including tires, inner tubes, parts and accessories. The timers and coils were used on internal combustion engines that require the ignition of compressed gas.

## Ford to Discontinue Accessories, Report

PHILADELPHIA, July 7—A report is prevalent here that the Ford Motor Co. plans to cease selling accessories. The change, it is understood, will be gradual, in order to clean up accessories now on hand.

Dealer dissatisfaction is reported to be the cause of the contemplated change. The Ford plan is said to have reduced profits Ford dealers previously made on accessories.

### Company Denies Change

DETROIT, July 8—The Ford Motor Co. denied it intends quitting the accessory business when rumors of a change were cited.

## Davis to Try Paris Flight in Arctic Expedition Plane

NEW YORK, July 6—Noel Davis, a naval reserve officer who has been on active duty in the design division of the Naval Bureau of Aeronautics, plans to compete for the \$25,000 prize offered by Raymond Orteig for a non-stop flight from New York to Paris.

He has purchased the Wright-engined Fokker monoplane, Detroit, which Capt. George H. Wilkins of the Detroit Arctic Expedition used on his unsuccessful attempt to reach the North Pole by air, and expects to start some time in July before the Sikorsky biplane being made ready for Capt. Rene Fonck's New York-Paris flight is completed.

### Exchange Fisher Stock

NEW YORK, July 3—Stockholders of the Fisher Body Corp. were notified yesterday of the formal dissolution of the company on July 1, following completion of the transfer of assets to General Motors Corp. under the terms of the offer made on May 13.

W. A. Fisher, president of the Fisher company, announced that certificates for common stock of General Motors, deliverable in exchange for common stock of Fisher Body, are now available to stockholders upon surrender of their stock.

### Detroit Agencies Combine

DETROIT, July 2—The Fox Advertising Agency of Detroit, has merged with the Tom H. Bartel Co., a general advertising and direct mail campaign agency. H. V. Fox has been named vice-president of the Bartel Co., of which Tom H. Bartel is president.

### Truck Branch at New Orleans

NEW ORLEANS, July 8—Yellow Truck & Coach Mfg. Co. has opened a direct factory branch in New Orleans for the sale and service of its products.

## Congressmen Named to Decide on Taxes

Green of Iowa Heads New Committee to Consider All Revisions

WASHINGTON, July 6—The personnel of the Joint Congressional Committee on Internal Revenue Taxation, which will be the body before which the automotive industry must wage its final fight for the repeal of the remaining 3 per cent excise tax on passenger cars, was named this week, with the selection of Rep. W. R. Green of Iowa, as chairman. The full committee is as follows: Rep. W. C. Hawley, vice-chairman; A. T. Treadway, J. N. Garner, J. W. Collier, House members; Senators Smoot, Watson, D. A. Reed, Simmons, and A. A. Jones.

The committee, as named, consists of six Republicans and four Democrats and is an "administration" committee, both as to political ties and from past records in the previous fight for complete repeal of all automotive taxation by the Federal government.

It is problematical whether or not there will be any taxation legislation at the December session of Congress, although the committee is vested with authority to make any recommendations it may see fit and must make a complete report by Dec. 31, 1927, as to the entire excise tax structure. At the present time there are approximately a dozen bills which "died on the calendar" with the expiration of the present session, which called for the complete repeal of the remaining 3 per cent automotive tax. These measures, to be given consideration, must be reintroduced at the next session, and when reintroduced will go to the above named committee for hearings before they can be considered by the House and Senate.

### Kelly Seeks Foreign Trade

SPRINGFIELD, OHIO, July 1—Foreign connections are being made by Gen. C. C. Jamieson, chairman of the board of directors of the Kelly-Springfield Motor Truck Bus Corp., who has been in New York for the last week. E. T. Herbig, sales manager, says the company expects good business in South America and Australia. The heavy duty truck is growing in popularity. There is a steady demand for the new ton and a half truck.

### Dodge to Continue "Four"

DETROIT, July 3—According to John R. Lee, sales manager of Dodge Brothers, Inc., the corporation is not going to replace the present Dodge Brothers four-cylinder car with a six. He also sets at rest a rumor that a six will be added to the Dodge Brothers line.

"We have been having one of the best years in the history of the Dodge Brothers company, and it would be foolish for us to discontinue the four," he declared.

## Tire Price Revision Restores 1925 Level

Practically All Leading Companies Join in Reductions Ranging 10 to 25 Per Cent

AKRON, July 7—Following in the wake of tire reductions by Goodyear Tire & Rubber Co. and a group of other leaders, a general revision downward throughout the tire industry will be made effective. Companies making revisions with Goodyear, were Kelly-Springfield Tire Co., U. S. Rubber Co., B. F. Goodrich Co., Fisk Rubber Co., and Dunlop Tire & Rubber Co.

Announcements by Firestone Tire Co., General Tire Co. and the Miller Cord Tire Co., as well as by others of the leading group, were to be made as rapidly as new lists were completed.

The Goodyear reduction ranges from 10 to 20 per cent on tubes and is approximately 10 per cent on casings. A 10 per cent reduction was made in February. In connection with the reduction now made, L. C. Rockhill, sales manager, said:

"This reduction puts dealers' prices of tires and tubes back to levels which existed prior to the three price increases of last summer and fall.

"While production costs are still based on rubber bought at levels higher than the present market, these reductions are being made earlier than might be expected that the public may benefit by lower prices at the height of the buying season. The present decreases in our prices merely anticipate reductions that normally would be expected.

Kelly-Springfield reductions ranged from 2 to 20 per cent. Dunlop reductions ranged from 10 to 25 per cent, Dunlop balloon casings are now at the lowest ever offered, it declares. Goodrich reductions range from 10 to 22 per cent. No percentages were announced by United States or Fisk but the range is expected to approximate the competitive changes.

## N.A.C.C. Films to Assist Foreign Traffic Control

NEW YORK, July 6—The National Automobile Chamber of Commerce is having motion pictures taken of systems of handling traffic in centers of congestion in the United States, showing light systems, one-way streets, safety zones and other such expedients.

The films will be completed in about six weeks and will be sent all over the world for the instruction of foreign police and other traffic control agencies.

The work is being done under the supervision of George S. Bauer, foreign trade secretary of the Chamber.

## W. T. Schmitt Sails

DETROIT, July 8—W. T. Schmitt, comptroller of the Chrysler Corp., sailed on the steamship Columbus, this week, on a business trip to Europe.

## 2,000,000 SEE WHIPPET IN INITIAL WEEK

TOLEDO, July 6—Approximately 2,000,000 persons have viewed the new Whippet model of Willys-Overland, Inc., in dealers' show-rooms during the first week it has been before the public, according to a check made by factory officials. President John N. Willys takes this tremendous show of enthusiasm as an "overwhelming trend towards greater efficiency in personal transportation."

## C.I.T. Plans Foreign Subsidiary Group

NEW YORK, July 6—The Commercial Investment Trust Corp. is planning the formation of several foreign subsidiaries, in addition to the Commercial Investment Trust Aktiengesellschaft which was recently opened in Berlin, and which is capitalized at 5,000,000 marks with ownership vested solely in the parent American company.

The foreign subsidiaries of the company will be available for financing of sales of the large group of American automobile companies at present being served in the domestic market.

The new German subsidiary will have for its manager Ludwig Lichtenstadter. Its board of directors will consist of Siegfried Bieber of the Berliner Handelsgesellschaft as vice-chairman; Minister A. D. von Raumer, Berlin; Dr. Paul Wallich of the banking firm of J. Dreyfus & Co., Berlin; and in addition, a number of the men who are now directors of the parent American company. Henry Ittleson, president of Commercial Investment Trust, who will serve as chairman of the board of the German company, will devote a considerable part of his time to directing the affairs of the Commercial Investment Trust Aktiengesellschaft.

Capital and surplus of the parent company, it is announced, now exceed \$26,000,000; its resources are over \$100,000,000 and based on business for the first six months of this year, plus orders and inquiries at hand, it is expected that the company this year will pass the \$200,000,000 mark in total business done for 1926.

## To Offer Rubber Patent

NEW YORK, July 8—Patrick Gow, a director of a number of English rubber companies, and Dr. Ernest Hauser, Austrian chemist, will arrive in the United States this week to offer important rubber patents to United States rubber companies. The patents cover a process of concentrating latex so that instead of 70 per cent water and 30 per cent rubber being charged as freight, the proportions will be reversed. The treatment is said to give manufacturing advantages and increase the life of tires 30 per cent.

## General Equipment Joins 3 Companies

J. F. Cleaveland Heads Combine Which Will Maintain Operations in Kalamazoo

KALAMAZOO, MICH., July 3—General Equipment Corp., with an authorized capital of 200,000 shares of no par value, of which 120,000 shares have been subscribed, began operations in Kalamazoo this week.

The industry is brought about by the merger of the Dearborn Equipment Co. of Kalamazoo; the Allen Electric Mfg. Co. of Detroit, and the Hempy-Cooper Mfg. Co. of Kansas City. Negotiations are also in progress looking to the acquisition of various other concerns, all engaged in the manufacture of garage and service station equipment. With the Dearborn Equipment Co. as the nucleus of the corporation, Kalamazoo became the manufacturing center and the industry will be developed in and around the Dearborn plant in this city.

The officials of the new company are: President and general manager, J. F. Cleaveland, formerly vice-president of the P. W. Robertson Corp., New York; vice-president and treasurer, William Shakespeare, Jr., formerly president of the Dearborn Equipment Co.; vice-president and chief engineer, G. H. Allen, formerly vice-president of the Allen Electric Co.; C. S. Bush, secretary and assistant general manager, formerly secretary and treasurer of the Dearborn Equipment Co.; sales director, M. E. Goldman, formerly general manager of the Forest Electric Co.; designing engineer, W. J. Hempy, formerly vice-president of Hempy-Cooper Mfg. Co.

## Forest Company Declares Merger Plan Abandoned

NEWARK, N. J., July 8—J. K. Elderken, president of the Forest Electric Co., has sent notice to all distributors of the company's products denying reports to the effect that the Forest Electric Co. has been included in a merger of four equipment manufacturers. The report referred to had it that the Forest company's products would be taken over in the merger and manufactured in Kalamazoo, Mich., and that the factory here would be closed.

In his bulletin to distributors Mr. Elderken said: "A merger plan was formed in which the Forest Electric Co. was to merge its automotive products only, continuing the manufacture of a greatly broadened line of radio power supply devices in the same factory with the same organization except for a few minor changes in the sales department.

"In so far as the Forest Electric Co. is concerned the merger plan has been abandoned and we wish to emphatically deny all rumors and articles to the effect that we are a party thereto."



## Hardwood Releases Increase in Volume

June Business Runs Well Ahead  
of 1925 Period—Prices  
Continue Steady

ATLANTA, July 6—Hardwood sales by southeastern lumber mills during June slightly exceeded sales during May, and were substantially larger than sales during June, 1925, with the inquiry unusually heavy during the last half of the month indicating that there will also be active business during the third quarter of the year.

A considerable volume of business was booked during June for delivery early in the third quarter, while to a greater extent than any time this year automotive and body builders showed a tendency to anticipate their requirements well ahead, several sizable orders of this nature being received by larger southern mills. From the volume of this business it is quite apparent that the automobile makers are contemplating considerable production activity during the next three or four months.

Though business earlier in the year was affected by the cold weather, which slowed up production schedules, sales the first six months of 1926 are believed to have been the largest in the history of the hardwood industry so far as automotive and body business is concerned. Implement manufacturers also bought on a much heavier basis during June, but their orders are still largely for their current requirements.

The primary call is for thicker dimensions of first and second white ash, and No. 1 and select white ash. First and second maple ranks third, with some call for no. 1 maple and a little call for elm. Prices, as a whole, are substantially the same as they were a month ago.

## Bendix Brake Business to Reach \$500,000 in July

CHICAGO, July 7—May production and shipments of the four wheel brake division of the Bendix Corp. totaled \$293,000 according to a report to stockholders by Vincent Bendix, president. For July the company was scheduled to ship approximately \$500,000. These months shipments compare to a total shipment in 1925 of \$325,000.

The brakes are now standard equipment on 12 types of cars made by nine manufacturers. Negotiations were reported in progress with practically all leading manufacturers, and closing of additional contracts is expected.

## Day-Elder in Receivership

NEWARK, N. J., July 7—Receivers for the Day-Elder Motors Corp. of Irvington have been appointed in Federal Court here. The receivers are T. McC. Marsh, secretary of the company, and P. R. Van Duyne. Assets are listed at \$340,000. Liabilities are not listed.

## ALL NEW SCENERY IN 3 YEARS' DRIVING

WASHINGTON, July 8—Motorists who crave a variety of scenery can drive for three years and sixteen days over American highways without seeing the same mile post twice, according to a statement of the National Geographic Society just made public here.

This is possible when one drives twelve hours each day at an average speed of 30 miles an hour. There are 400,000 miles of improved roads. This amount has just been catalogued by the society as "automobile highway."

It is a development of only 30 years, dating from the advent of the automobile, when it was a problem to find a passable road. "Mound builders, the mysterious vanished tribe in the Mississippi valley, had the first roads that were built in North America," the society declared.

## See Rubber Surplus Restriction Offset

NEW YORK, July 6—With rubber prices fluctuating within an extremely narrow range, it is becoming increasingly evident to the trade here that unless there is a well sustained advance between now and Aug. 1 a 20 per cent reduction in exports from the British restricted area will be made effective as of that date.

The average spot price in London from May 1 to June 30 was 21.385 pence, Henderson, Helm & Co. point out, and on this basis, in order to maintain a minimum market price for spot rubber, 21 pence to August 1, it will be necessary that the average from now until the end of this month be 20.288 pence. The price today is 20 1/4 pence, so that it is apparent that rubber buyers face the reduction unless there is some recovery from the present dull condition of the market.

It is pointed out, however, that many of the rubber plantations have not been exporting the full quota allowable under the present current scale of the restriction system, and that this surplus on Aug. 1 will amount to about 20,000 tons. This should be enough to make up for the 20 per cent cut in the export allowance during the remainder of the year so that the effect, if any, will not be felt this year.

## Daimler-Benz Merge

NEW YORK, July 8—Cable advices indicate the closing of negotiations for a merger of the Benz Motor Co. and the Daimler Motoren Aktien Gesellschaft, the new company to be known as the Daimler Benz Aktien Gesellschaft. Shareholders of the Benz company will receive one share of stock in the new company for each share of Benz.

## Steel Waits Trend as Last Half Opens

Opinions on Course of Industry  
in Coming Six Months  
Are Withheld

NEW YORK, July 8—Encouraging as was the record of the steel market during the year's first half, sentiment at the resumption of business following the holiday is not so much one of optimism as of skepticism regarding the outlook. Men who, a few years ago, were always ready to venture a worth-while opinion as to the market's prospects during the ensuing three months on the basis of its performance during the preceding six, now fear making any predictions lest developments over a fortnight prove them false prophets.

Next Saturday's unfilled tonnage statement of the leading interest is looked forward to with eager expectancy. Whatever may have been the motive in the pre-holiday upward flight of the leading steel stock, nothing in the steel market's internal developments could be interpreted as warranting so spectacular an advance.

Some of the high percentages sometimes mentioned would make statistics of steel production before there were automobiles look fictitious. In 1897, "the year before there were automobiles," at least before there were 1000 car car registrations, the country's total production of rolled iron and steel was 7,000,000 tons.

At present production is close to five times that tonnage, and even on the absurdly low estimate of only 10 per cent of that total being consumed in automobile manufacture, one-half of the total rolled iron and steel production of "the year before there were automobiles" is today consumed in motor vehicle manufacture, to say nothing of other automotive consumption of steel.

**Pig Iron**—The market is quiet, although the stagnant condition of a few weeks ago has passed. Prices generally remain on an unchanged basis and a rather steady tone prevails.

**Aluminum**—Imports continue along entirely unchanged proportions, and the domestic demand is maintained at a very satisfactory level. The London market is cabled as steady at £118 per long ton, the equivalent at the present rate of exchange of 25 2/3c per pound, compared with 27c, the New York market price for 98 per cent metal. Remelted metal is in good demand at full prices.

**Copper**—Increased freight rates on copper, brass and bronze products which were to go into effect July 1 have been suspended until Oct. 29 by the Interstate Commerce Commission. The market marks time.

**Tin**—Fairly active demand prevails.

**Lead**—Increased buying by the paint industry makes for stiffer market conditions. Some storage battery demand for August delivery is noted.

**Zinc**—Demand is moderate; market fairly steady.

## Air Board Granted Selective Bid Right

### Awarding of Contracts for Planes and Material on Merit Basis

WASHINGTON, July 6—The authorization of a centralized Federal purchasing board for airplanes, engines and kindred equipment, is provided for under the terms of House bill No. 11,284, which passed Congress during the closing session. The board will coordinate the aircraft purchasing plans of all Federal Departments and will be empowered to award bids to other than the lowest bidder, which has been impossible heretofore.

During discussion of the measure the present system of bidding was scored by members of the House and Senate who declared that irresponsible manufacturers were enabled to secure government contracts from more responsible manufacturers by underbidding and then making up the difference by inferior equipment, with "a resultant loss in life and property when planes fall."

The Board will consist of the Assistant Secretaries of War, Navy and Commerce, an Assistant Postmaster General, the chief of the Air Service of the Army and the chief of the Aviation Bureau of the Navy.

### Congress Approves Naming of Davison and Warner

WASHINGTON, July 6—Confirmation of the two appointees of President Coolidge to fill the posts of Assistant Secretaries of the Air, of the War and Navy Departments, were made during the closing hours of Congress, with the selection of F. Trubee Davison, of New York to be Assistant Secretary of War, and Edward P. Warner, Assistant Secretary of Navy.

Messrs. Davison and Warner will hold posts created under legislation just enacted by Congress with a view of strengthening the army and navy air forces. Another measure, which also carries out recommendations of the President's Air Board, provides for an Assistant Secretary of Commerce to have charge of the new bureau of Civil Aeronautics. As yet none has been appointed to fill this position and in all probability an executive from the automobile industry will be selected for the post, under a recess appointment.

### Appleton New York Office

NEW YORK, July 3—The new New York address of Appleton Electric Co. is 150 Varick St., instead of 15 as it was inadvertently stated in a recent issue of this paper.

### Detroit to Operate Buses

DETROIT, July 3—Jitney bus drivers of Detroit have lost in their fight to prevent the city from banning them from the streets.

The State Supreme Court has denied them a rehearing on their petition to restrain the city from ousting them from the streets. The case has been pending four years.

The City of Detroit, which owns the street railway system, plans to replace the jitneys with a fleet of large buses recently purchased from the Detroit United Railways.

## Machine Tool Sales Show Business Good

BRIDGEPORT, CONN., July 3—Bulard Machine Tool Co. reports satisfactory sales for the first six months of the year. While business for 1925 was fairly steady and in total volume equalled the quota set, the amount already on the books for six months of 1926 is considerably in excess of last year's figures for the same period. No extended period has shown less than the sales budget but the excess has accumulated during the last several weeks. June sales are well up among the highest monthly totals ever booked by the company. A large proportion of the orders have originated in the automotive field, but a satisfactory condition of general business is reflected in the large volume received from all lines of manufacturing industry.

The railroad field is well represented on the unfilled-order book, indicating an anticipation on the part of the railroads of a continued and increasing demand for efficient transportation.

A general upward trend in business is indicated and expansion projects, together with replacement of even recently obsoleted equipment by that of most modern design, indicates a steady demand.

### Stromberg Retains Officers

NEW YORK, July 3—Stromberg Motor Devices Co. reelected directors at the annual meeting. By-laws were amended to change the date of the annual meeting from the last Wednesday in June to the first Wednesday in June. At the directors' meeting retiring officers were reelected. William L. O'Neill was elected first vice-president and J. E. Morehouse second vice-president.

### Field Body Plant Sold

OWOSSO, MICH., July 3—The Grand Rapids Body Co. has purchased the plant, equipment and real estate of the defunct Field Body Corp., at auction for \$121,500. Stockholders are planning a meeting soon when they may decide to raise the bid so that they may buy and operate the plant themselves.

### Zenith Business Grows

DETROIT, July 3—Sales of Zenith carburetors have shown a large increase, this year, according to V. I. Shobe, assistant general manager of the Zenith-Detroit Corp. According to Mr. Shobe, sales since March have grown steadily, each month. He said 1926 will be a banner year for Zenith carburetor and its dealers.

## Financial Notes

Fisher Body Ohio Co. earned \$5,719,924 for the fiscal year ending April 30. This is better than \$57 a share of 100,000 of common stock and compares with \$1,247,498 for the previous year after \$704,133 in preferred dividends was paid. The balance of the \$10,000,000 of preferred was retired Oct. 1, 1925, at 110 and accrued dividends. The statement submitted at the annual meeting July 1 shows that on April 30 the Fisher Body Corp. owned 98,565 shares of the common stock of the Fisher Body Ohio Co., leaving 1435 shares in the hands of outside investors.

At the meeting the directors voted a quarterly dividend of \$2.50 payable Aug. 1 to stockholders of record July 20. All officers and directors of the company were reelected.

Marmon Motor Car Co. has paid off all bank debt which at the beginning of the present fiscal year, July 1, 1925, totaled \$1,888,000. It is estimated that the company will show net profit for the year of approximately \$1,800,000. This will compare with \$1,442,898 in the previous year. Current assets will approximate \$3,575,000 as against current liabilities of \$825,000. These on June 30, 1925, were \$4,370,922 and \$2,978,030, the latter including bank debt.

Yellow Truck & Coach Mfg. Co. stockholders approved increase in common from 1,000,000 to 1,700,000 shares, in the class B from 600,000 to 1,300,000 shares and in preferred from 200,000 to 300,000 shares. Additional class B stock will be offered common and class B stockholders of record July 9 at \$20 a share, on basis of one share for each two shares held.

Edmunds & Jones Corp. has called for redemption all outstanding preferred stock at \$120 in accordance with plans for merging with the C. M. Hall Lamp Co. Stockholders of Edmunds & Jones will soon meet to vote on the proposal. Directors of both companies and stockholders of the Hall company have approved the proposal.

Chrysler Corp. has retired 4010 shares of its preferred stock under the provisions of its incorporation. It has also anticipated the maturity of \$1,119,000 of its 5½ per cent serial bonds, \$750,000 of these bonds having been acquired this year in the open market, leaving outstanding \$1,951,000.

Gotfredson Corp. will pay the usual quarterly dividend of 37½ cents a share to all shareholders of record at June 13, payable July 15. Earnings for the first five months are sufficient to take care of this year's dividends. Unfilled orders insure full time production.

Seiberling Rubber Co. reports net income for May as \$96,414 with gross income of \$1,535,830. Five months gross income was \$5,684,718 with net of \$18,181. June business is running at the rate of \$1,750,000.

Continental Motors Corp. declared regular dividend of 20 cents a share, payable July 30 to stock of record July 15. This makes a total of \$1,056,507 in dividends thus far this year.

### Roffman Rim Moves Plant

CLEVELAND, July 8—The Roffman Rim Corp. has moved its main office and factory to larger quarters at 5101 Lakeside Avenue.



## Mid-West Car Sales Show Steady Gains

CHICAGO, July 8—The number and value of new passenger cars sold at wholesale in the mid-west declined 12.3 per cent in May from April according to report of the Federal Reserve Bank of Chicago. The wholesale distribution, however, increased 1.4 per cent over May, 1925.

Retail sales showed a gain of 9 per cent over April and of 7.8 per cent over May, 1925. The valuation increase was 7.3 over April and 15.5 over May, 1925. New cars on hand showed a decrease of 27 per cent under April but were 47.2 per cent higher than in May last year.

Used car sales showed a gain of 23.8 per cent over April and a similar gain over May last year. Used car stocks were 8.6 per cent lower than in April but 47.9 per cent higher than last May. The value of used car stocks was 54.7 per cent more than May last year but 3.7 per cent lower than in April this year.

The value of new car stocks was 23.3 per cent under April but 30.5 more than in May last year.

Deferred payment sales aggregated 50.5 per cent of the total retail sales as compared with 48.3 in April and 50.5 per cent in May, 1925.

## Planes to Carry Mails; Philadelphia to Washington

WASHINGTON, July 8—The contract for furnishing a commercial air mail service between Washington and Philadelphia has been awarded by the Post Office Department to the Philadelphia Rapid Transit Air Service of Philadelphia. The concern agreed with the department to carry the mails for \$3 a pound per mile, to furnish three planes of the Fokker F VII type, two to be placed in immediate use and one held in reserve. Each plane will be capable of

making 100 miles an hour and will be equipped with three Wright 200 hp. "Whirlwind" engines.

Postmaster General New announces that landings will be made at or near the Sesqui-Centennial grounds in Philadelphia, and the dispatch of mail will be to and from the model post office established on the exposition grounds. Although the schedule has not been made public, it is expected that it will provide for not less than six round trips each week.

The contractor will be permitted to carry passengers as well as mail over the entire distance of 123 miles.

## Hilo Increases Facilities, to Announce New Lacquer

BROOKLYN, July 6—The Hilo Varnish Corp. has under construction a five-story building, 75 x 100 ft. with an interior court 40 x 45 ft., on a lot adjoining the present plant. The new unit will be entirely of reinforced concrete, so built that two additional stories can be added.

The first floor will be a shipping floor. The second floor will be used for storage and the three upper floors for the grinding department, which will double the present grinding space.

When the added facilities are in service, Hilo expects to bring out a new lacquer finish.

## Auburn Equals 1925 Total

AUBURN, IND., July 6—With shipments for the first five months of this year equalling the total for the entire 12 months of 1925, the Auburn Automobile Co. has plunged into the last half of the current year under full capacity production.

Officials announce that from all indications all former retail sales figures of the company will be broken before the end of the year. Sales have been large in all parts of the country and especially in the Chicago district.

## Elyria Iron & Steel Buys Standard Tube

TOLEDO, July 6—Sale of the Standard Steel Tube Co. of Toledo to the Elyria Iron & Steel Co., Cleveland, was announced here today.

The company maintains a large plant in this city employing about 250 men and turning out 2,500,000 ft. of tubular steel pipe a month. A large part of the product goes to the automotive industry with some going into production of agricultural implements, vacuum cleaners and other machinery.

George B. Storer, Jr., son of the founder of the company has been president and general manager. He will retain an interest in the new company and the plant here will operate as the Standard Steel Tube division of the parent company. The company was formed here in 1903.

## Car Thefts Gain Slightly

BALTIMORE, July 8—There were 113 more automobiles stolen during the first six months of 1926 than during the corresponding period last year, according to police records, which show that 1133 cars have been stolen so far this year and 1099 recovered. From Jan. 1 to June 30, last year, 1020 machines were stolen and 997 were recovered. Altogether in 1925, thieves stole 2206 cars only 53 of which have not been recovered to the present time.

## Diana One Year Old

ST. LOUIS, July 6—Diana distributors and dealers this week are celebrating the first anniversary of the Diana straight eight.

"This is a proud event for us of the Moon Motor Car Co.," declared Stewart MacDonald, president, and Diana's sponsor general. "The success of Diana is reflected in the steadily increasing sale on this car, the demand for which caused an increase in production this year."

## Developments of the Week in Leading Motor Stocks

NEW YORK, July 8—A record high price for General Motors above \$150 a share featured the trading in the motor stocks during the past week. The stock was heavily dealt in and the steady advance was attributed to buying for brokerage account as one of the most conservative houses in the Street recommended its purchase as an investment.

Some of the other motor issues also saw their best levels this year. Packard made a new high for 1926, although the stock is still several points below its record high established in 1925. The buying in this stock was in anticipation of the melon which directors announced during the week in the payment of an extra cash dividend, a stock dividend and a higher dividend basis on the new stock. Packard has been one of the most conservative dividend-payers in the industry

in relation to its earnings, and the present dividends are interpreted as a division with shareholders of the record profits which have been piling up during the current year. Nash Motors was strong on dividend prospects, advancing several points.

The investment buying of motor company preferred stocks referred to recently was still in evidence notably in Pierce-Arrow preferred which advanced sharply to record high prices. Yellow Truck preferred, Dodge Brothers preference, Chrysler preferred and Willys-Overland preferred showed conspicuous strength throughout the week.

Hudson Motor gave an unsatisfactory performance showing a tendency to seek lower levels with every lull in the bullish demonstrations in other stocks. The weakness in this issue, however, was

overshadowed by the general strength in the several leaders in the motor group.

Mack Trucks and White Motors were in good demand.

The rubber stocks were under pressure as various companies announced sharp reductions in tire prices. U. S. Rubber and Goodrich were in fair supply, but good buying at levels slightly below the market kept these stocks from showing pronounced weakness.

Hayes Wheel had a sharp advance of 4 or 5 points following the announcement that the patent case pending against the company by a competitor had been dismissed. Stewart-Warner was another feature among the accessories due to rumors that Durant was again active on the constructive side of the market which were borne out by the strength of several other issues.—E. S.

## Men of the Industry and What They Are Doing

### Studebaker Names Willis Australasian Director

George E. Willis, manager of export sales for the Studebaker Corp. of America since January, 1924, is leaving that position to accept the post of managing director of the Studebaker Corp. of Australasia, Ltd., with headquarters at Sydney. Howard S. Welch has been appointed to succeed Mr. Willis as manager of export sales.

Mr. Welch has filled the position of assistant sales manager of export sales since November, 1919. He is an accomplished linguist and has travelled extensively in all parts of the world in his position as assistant manager of export sales, being known personally to practically all Studebaker foreign representatives.

Mr. Willis has been with the Studebaker organization since 1911 when he was named manager of the branch in Berlin, Germany. On the closing of this branch in 1914 due to the war, he served the corporation as a special representative in Russia. In 1917 he was appointed manager of the Studebaker branch in Des Moines, and in 1921 he became manager of the Cleveland branch. In January, 1924, he was called to the home office to take charge of the rapidly expanding export sales department.

In his new position he will handle the wholesale and retail distribution of Studebaker products in New South Wales, and the wholesale distribution throughout Australasia. He is well known in this territory, having spent much time there in two recent trips around the world.

### Pilch With Dodge Brothers

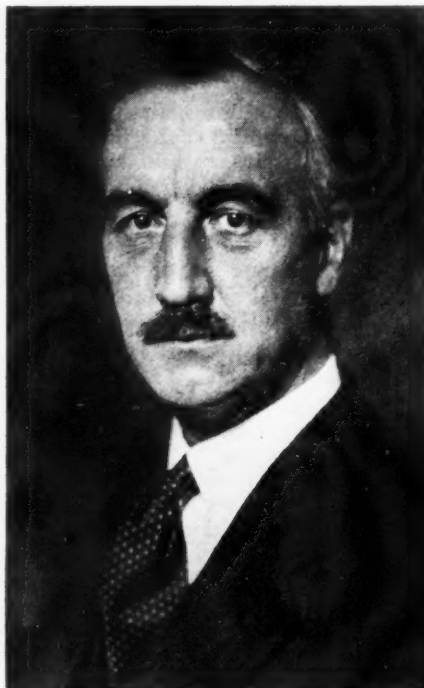
H. Sutherland Pilch has been appointed Dodge Brothers district representative in the Near and Far East by Percy Owen, director of foreign sales. He will sail on Aug. 4 for Syria. Mr. Pilch has been engaged in automotive merchandising for the past 25 years, at one time being sales manager of Gaston, Williams & Wigmore. He has specialized in the export field for the past 15 years and is prominent in automobile circles in many countries.

### Kellam Joins Distributor

James A. Kellam, who has been in the automobile business for more than 25 years, has been elected a vice-president of the Landman-Griffith company, of this city, Chrysler distributors for Toledo and a large section of surrounding Ohio territory.

In his new position Mr. Kellam will have charge of retail sales.

For several years he was general sales manager of the Ohio Electric and Milburn Electric companies in Toledo and liquidated both of these concerns when they retired in favor of gasoline powered cars.



Herbert C. M. Stevens

### H. C. M. Stevens Appointed Chief Engineer of Olds

Herbert C. M. Stevens has been appointed chief engineer of Olds Motor Works, succeeding Robert K. Jack, resigned. Mr. Stevens has been connected with Olds for the past year as consulting engineer, coming to this position following a long and successful engineering career in Europe.

Among his outstanding achievements include the production of the Sunbeam, Talbot and Darracq group of automobiles. During his ten years' connection with the S-T-D, he developed the three-litre Sunbeam racing cars, winners of many trophy races, and the 1½ litre Darracqs also widely known in Continental racing.

He also directed the building of the engines for the dirigible R-33 which made a successful trans-Atlantic flight from England to America and return in 1920.

### Burgess Awarded Degree

Charles F. Burgess, head of the Burgess Battery Co., Madison, Wis., was awarded the degree of Doctor of Science at the annual commercial exercises of the University of Wisconsin. Dr. Burgess was for many years a member of the University of Wisconsin faculty, resigning to establish the C. F. Burgess Mechanical Laboratories at Madison, which have now been developed into the Burgess Battery Co., one of the largest makers of dry cells for radio, automobiles, etc., in the country. The honorary degree is in recognition of his work in the development of scientific discoveries and their application to commercial uses.

### Montigney Heads Traffic Club

J. W. Montigney, traffic manager of the Cleveland Tractor Co., was elected president of the Traffic Club of Cleveland at its annual meeting held at Mentor Headlands. J. E. Anderson of the Big Four Railroad was elected first vice-president; A. H. Brown, of the Chamber of Commerce, second vice-president; W. A. Ray of the Nickel Plate Railroad, secretary; J. M. Gray of the Universal Car Loading & Distributing Co., treasurer. Following the business meeting there were boxing bouts, golf tournaments and a barbecue dinner.

### McVittie With Hughes

Kenneth McVittie is now representing Hughes & Co., fuel oil distributors, in Michigan. He succeeds C. P. Hirth, who has been named sales manager of the wholesale division in the Chicago office.

### Gillespie Joins Jeffery

Robert W. Gillespie, for many years identified with the Bethlehem Steel Co., has been elected vice-president, assistant general manager and member of the board of directors of the Jeffery Mfg. Co., of Columbus, Ohio.

### E. E. Cline Resigns

Elmer E. Cline has resigned as superintendent of the United Alloy Steel Corp. Mr. Cline for 54 years has been identified with the steel industry. An informal reception was held at the plant and a watch given to him by executives. Though he has made no definite plans for the future Mr. Cline announced he would remain with the corporation in an advisory capacity.

### Horter Boston Manager

B. M. Horter, formerly of the Philadelphia office of the Cutler-Hammer Mfg. Co., has been appointed manager of the Boston office, succeeding J. M. Fernald, resigned. Mr. Horter has been with Cutler-Hammer since 1916.

### Nobile to Visit Cleveland

Invited to this district by the Good-year Tire & Rubber Co., General Umberto Nobile, designer of the dirigible Norge in which Roald Amundson and Lincoln Ellsworth made the first flight across the North Pole, will address Clevelanders, July 11 and 12.

### SUMMER MEETING AT ERSKINE HOME

The summer meeting of the National Automobile Chamber of Commerce directors will be held at the home of A. R. Erskine, president of the Studebaker Corp. of America, at South Bend, Ind.



## World's Car Ratio One to 71 Persons

United States Leads With Hawaii and Canada Next—  
Afghanistan Lowest

WASHINGTON, July 8—One out of every 71 persons in the world is the owner of an automobile and the United States not only has the greatest number of automobiles of all of the countries of the world but it has also the highest ratio of automobiles to population, with one car to every six persons in this country, it is announced by the Automotive Division of the Department of Commerce.

Hawaii has the second highest ratio of automobiles to population with one to every 11 people, while Canada is third with one car to 13 persons. The ratio of New Zealand, which is next in order, is one car to every 14 people; Australia has one car for every 20 persons of its population and Denmark, the sixth country in the order of ratios, possesses one car for every 51 persons.

At the opposite extremity of the ratio order is Afghanistan, where only one automobile is in use for every 1,200,000 persons; Hejaz, which has but 4 cars or one for every 225,000 of the population; Abyssinia, with one automobile to every 133,333 persons and China which has a ratio of one car for every 31,871 inhabitants. The Solomon Islands, with a population of 151,000 persons possesses but 2 automobiles while Liberia has 54, or one for every 34,259 persons in the republic.

The estimated percentage of American cars which are owned in a number of countries of the world has been obtained from registration figures and import statistics. This survey reveals that in 19 of the 59 countries considered, at least 90 per cent of the automobiles owned were manufactured in this country while in 7 more countries at least 80 per cent of the cars owned were of American make.

### 223,000 Cars Cross Bridge in First 6 Days of Use

PHILADELPHIA, July 7—Traffic over the Delaware River bridge in the first six days of its operation, recorded the passage of 223,000 automobiles and motorcycles. In one 24 hour period, 9 A. M. July 3 to 9 A. M. July 4, 60,000 motor cars crossed the span. The capacity of the bridge is for 6000 cars an hour but it is expected that this number will be exceeded at times.

Toll collectors were unable to collect tolls through their hand registers without causing heavy delays in traffic and abandoned them to collect the passage money in large open bags. Four new toll booths have been erected.

It is likely that the lights on the bridge will be altered as these were found in operation to create a glare.

### CHAMPAGNE NAMES NEW MATHIS CAR

PARIS, June 23 (by mail)—Uniting 200 dealers at its Strasbourg factory, Mathis yesterday introduced its new model 8-h.p. car with the pomp usually associated with the launching of a ship. Placed on a raised, flower-bedecked platform, a bottle of champagne was poured into the radiator of the new car and cut the tricolor ribbons thus sending it down the inclined path among the waiting dealers.

The new model has a wheelbase of 104 in. a track of 46 in. and a four-cylinder engine of 60 x 105 mm. (2.36 x 4.1 in.) giving a piston displacement of 73 cu. in. A two-bearing crankshaft of 1.85 in. diameter is used and one of the features of the engine is the placing of the timing gears at the flywheel end. Four speeds are fitted, the car has Perrot front wheel brakes and with fabric leather five-passenger sedan body weighs 1760 lb.

### Virginia Names Shirley to Complete Road System

RICHMOND, July 8—Henry G. Shirley, chairman of the State Highway Commission has been reappointed for another term of four years.

In announcing the reappointment, Governor Byrd has addressed a letter to him expressing gratification that he had consented to serve. "During the term of your reappointment," says the letter, "we can look forward to completion, with permanent types of construction, of the main arteries of travel throughout the State. Virginia will then be the first State in the Union to complete a great highway system without the issuance of bonds."

### Gardner High in Cities

ST. LOUIS, July 6—Gardner Motor Car Co. sales at 12 key cities from coast to coast show an average increase of 122 per cent for the first five months of the current year, compared to sales for the same period of last year, the company announces. Kansas City, Mo., led the key cities with a gain of 298 per cent. New York was second with 171; St. Louis, third with 162 and Philadelphia, fourth with 161.

### W. F. Holliday

DETROIT, July 2—William F. Holliday, member of the firm of Grace & Holliday, advertising counsel and publishers, died Tuesday in Harper Hospital after several weeks' illness. The company handles the Continental Motor Corp. advertising account and Mr. Holliday was well known in automotive advertising circles.

Besides his advertising activities, Mr. Holliday was active in the Detroit Board of Commerce and the Players Club.

## Duty Modifications Aid Canadian Sales

Continuation of Former Good  
Business Seen by Willys-  
Overland Executive

TOLEDO, July 6—Manufacturing plans of Willys-Overland, Ltd., Toronto, have not been affected materially by the new tariff reduction worked out in the last two months by the Canadian government, it was announced by officials here this week.

First reductions in tariff on finished cars threw parts duties out of line and threatened to cut down manufacturing operations. However, the adjustment made so that certain parts enter free, the 25 per cent drawback on cars 40 per cent made in Canada and the cutting off of excise taxes on cars 40 per cent made in Canada and sold under \$1200, both arranged for a year, have helped to bridge over the period and it is believed will stimulate the manufacture and sale of motor cars in Canada.

"It is the opinion of those in the industry that these changes will make possible continuation of the business in Canada and permit of its growth and extension, which during the past few years has been quite remarkable," declared T. A. Russell, president of Willys-Overland, Ltd., Toronto, in a letter to R. J. Archer, general manager of the John N. Willys Export Corp.

Officials look for the new Whippet model with its high economy factor and modern design to create a big demand in the foreign markets.

### P. O. to Use Armored Cabs

WASHINGTON, July 8—A fleet of armored cabs will shortly be placed in service by the Postoffice Department in line with a new idea developed for transporting mails.

The department announces the cabs have been especially adapted to transport registered mail at the larger postoffices throughout the country and they will resemble in a measure the Army fighting tanks used in the World War and will afford added protection against robberies by the so-called mail bandits.

According to present plans only 20 of the cabs will be purchased at this time. The contract has been let to George B. Marx of Brooklyn, N. Y., at \$775 each. The contractor has promised to deliver them within the next three months.

### Freight Not Dutiable

WASHINGTON, July 8—In connection with the entry into this country of foreign automobiles, the item of freight is not dutiable, according to a decision just rendered by the United States Customs Court at New York, sustaining a protest of J. W. Stelling. In a decision involving this question, Judge Adamson writes.

## Franklin Observes 25th Anniversary

Present Year Best in Its Long  
Career—Stages Air-Cool-  
ing Test

SYRACUSE, July 3—Franklin Automobile Co. celebrates this week the 25th birthday of air-cooling with a program which will be nationwide as well as local. About 200 Franklin dealers started early Thursday on a 100-mile low-gear test. It is expected that seven or eight hours will be required to complete this test of air-cooling. Dealers in all parts of the country are meeting at central points. Approximately 20 Franklin cars will complete their low-gear runs at the New York State Fair Grounds.

At noon 2500 employees met in the Franklin Recreational Hall here and were addressed by Franklin executives and by Chancellor Charles W. Flint, of Syracuse University. There was special recognition of 60 employees who have been associated with the company more than 20 years.

The Franklin company is the sixth oldest manufacturer of motor cars in America, and is the outgrowth of the H. H. Franklin Mfg. Co., organized in 1893 by H. H. Franklin to produce die castings. This company was incorporated in 1895 for \$100,000. In 1901, John Wilkinson was employed to develop an automobile, the power unit to be patterned after the engine which he designed and built in 1898. The latter was the first four-cylinder air-cooled, valve-in-head engine ever built in America.

The growth of the local manufacturer is shown by the company's production figures: in 1907, 1509 automobiles were shipped; in 1910, 1920 cars; in 1914, 2502; in 1916, 3804; in 1917, 8987; 1925 was the best year recorded but 1926 to date, in point of retail deliveries, is going well ahead of 1925.

There are Franklin sales representatives in 500 cities and towns in the United States and Canada and 12 in foreign countries. The authorized capital is now \$15,000,000 in preferred stock and 600,000 shares of common stock.

The Franklin company is one of the few automobile companies among those which started 25 years ago which is still headed by the officials who organized it.

### Ohio U Has Highway Course

COLUMBUS, OHIO, July 1—The Ohio State University announces the opening of a course in highway engineering, starting at the opening of the school year in September. This is the direct result of action taken by the Ohio Automobile Association at the annual convention held in Columbus in May. The board of trustees followed the recommendation of the Ohio Automobile Association and established the course. It will be available to students in engineering after they have taken three years' work.

### CENTER-LINE SAVES LIFE OF HIGHWAYS

COLUMBUS, OHIO, July 6—Highways on which the center of the road is marked with a white line, last longer than those which are not painted in that fashion, according to George F. Schlesinger, Ohio highway director, who has charge of the painting of highways. This is explained by the fact that drivers do not go too close to the edge of the macadam or other type of paving, because of the feeling of safety when they are driving to the left of the white line. Route marking crews of the Ohio highway department will soon complete the work of marking all dangerous places on State roads. This has proven to be the most efficient safety measure that has been devised. It is used on all curves, hill crests and other dangerous points.

## Gasoline Output Reaches New High Point in May

NEW YORK, July 3—The Bureau of Mines reports a new record in gasoline production in May, when a total of 1,029,375,000 gal. was recorded, compared with 987,633,000 in April, the previous high month. Domestic consumption was 988,677,000 gal. against 831,410,000 in the preceding month, and exports were 190,224,000 gal., compared with 184,891,000 in April.

Stocks of gasoline from May 31 totaled 1,802,101,000 gal., a decrease of 124,624,000 gallons from those on hand April 30, the May figure representing 51 days' supply, compared with 64 days' supply the preceding month.

The domestic consumption registered in May was also a new record and represented an increase of daily average over April of 15 per cent. May production was the first time that the billion gallon mark has been reached.

Reports from the financial district are that the leading oil refiners in the mid-continent district are starting to reduce crude oil runs as a step toward reducing production of gasoline in that area.

## Army Aviation Bill Signed

WASHINGTON, July 7—The nation's first major aviation program was assured this week with President Coolidge's signature to the Army Aviation bill authorizing a five-year building program during which \$75,000,000 will be expended in the construction of 1800 new planes.

## Highway Convention Set

WASHINGTON, July 7—The American Association of State Highway Officials will hold its annual meeting this year at Pinehurst, N. C., on Nov. 8-12, according to announcement just made here. Federal-aid, reciprocity, drainage, maintenance and marking of routes will constitute a major part of the program.

## Harvard Sets Prize for Trade Campaign

New List of Awards Includes  
Special Media Appeal  
for First Time

CAMBRIDGE, MASS., July 6—For the first time an award of \$2000 will be given as a part of the Harvard Advertising Awards, for the advertising campaign of the year coming under the consideration of the Jury of Award as the campaign most conspicuous for the excellence of its planning and execution which seeks publicity for industrial products primarily through the media of industrial, trade or professional journals.

Industrial products seeking publicity through general popular magazines may compete for the award of \$2000 given for the best national campaign, either of an institutional character or devoted to the advertising of specific products.

Prizes will also be awarded for local campaigns, a special award of \$2000 to go for a local campaign executed in cities of 100,000 population or less.

Four prizes of \$1000 each are offered for individual advertisements most effective in use of text, most effective in pictorial illustration, in combination of both and in typography.

Edward W. Bok founded the Harvard Advertising Awards. Advertising material to be considered must be received by the secretary of the Harvard Business School on or before Dec. 31, 1926. The awards will be made early in January.

Additional information may be secured by writing to the Harvard Business School secretary.

## Willard Adds Building

CLEVELAND, July 8—The Willard Storage Battery Co. will begin the construction of an additional building at its plant here. The structure which will be of one and three-story construction of reinforced concrete faced with brick and cost \$50,000. Work is to be concluded within 50 days on the three-story unit and in a month thereafter on the one-story section.

The new building will be the tenth in the Willard group and provides the company with more than eleven acres of floor space. The addition was made necessary by demands of increasing production.

## Zenith Foundry at Peak

MILWAUKEE, July 2—Additions to the plant of the Zenith Foundry Co. are becoming necessary because of the crowded condition of the plant, due largely to the demands of the automotive and gas engine industries. The concern was organized to take over, on May 1, the plant of the West Allis Iron Works. In the first two months of operation, the business has been increased fully 100 per cent and full capacity production has not kept up with orders.



## Tire Questionnaire Seeks Dealer's View

Statistics as to Stocks and Sales  
Handicaps Sought by Na-  
tional Association

NEW YORK, July 3—The National Tire Dealers Association is sending a questionnaire to all its members to obtain dealer statistics as of July 1. George J. Burger, secretary-treasurer, says that never in the history of the tire industry were these statistics more necessary than at the present time.

In view of the action by the Greater New York Tire Dealers Association, of which Mr. Burger is president, in appointing a committee to ask tire manufacturers for some system of giving dealers future prices, it is significant that the questionnaire includes this query:

Has the uncertainty of prices retarded your sales?

Other information desired is the number of high pressure, balloon, tire and bus, solid and cushion and pneumatic tires and tubes on hand July 1, the number of tires stocked by each dealer, how sales during the first half of this year compared with the 1925 period and whether dealers find an increasing demand from consumers for tire repairing.

The replies are to be returned not later than July 20.

## Rule Forfeit Car Balance be Paid to Note Holder

WASHINGTON, July 2—Another step in clarifying the rights of an automobile dealer—the holder of automobile paper on which he has a lien and which has been seized by Federal authorities in connection with the transportation of liquor—was made by the Federal court this week in an opinion rendered by the United States District Court at Knoxville, Tenn., and reported to the Department of Justice.

The facts briefly are these: The automobile was sold by the Vester Motor Co. of Knoxville to a purchaser, who was subsequently caught transporting liquor. The sale was for \$570, of which \$126.32 was cash, the balance of \$443.76 being in notes, payable \$36.98 per month. At the time of the arrest \$360 was still due. The notes were held by the Tennessee Automobile Finance Corp.

The court's decision was to the effect that the purchaser of the car, so far as the Federal government was concerned, was the holder of the title and the owner of the car and that it would be subject to forfeiture, notwithstanding a conditional bill of sale.

The court in its decision, however, declares that on sale of the car by the government, the procedure should be to first pay the court cost and then turn over to the dealer or finance company, as the case may be (holders of the notes) whatever sum is left over to apply on liquidation of same.

## GOOD ROADS WEEK VOTED BY A. R. B. A.

WASHINGTON, July 2—Plans for the purpose of further fostering highway construction, and as a means of betterment for the country at large, were taken up this week by representatives of the American Road Builders Association and Federal Educational authorities.

It was decided that one of the best ways that this can be done is to designate the week of Jan. 10 to 17, 1927, as a National Good Roads Week. Teachers during that week will disseminate good road literature and information to the pupils of the country, explaining to them what good highways mean to them individually and to their cities and states collectively. Russell M. Arundel, a member of the public relations committee of the American Road Builders Association is in charge of the campaign.

## Seaman to Add New Unit, Output 71,605 in 1st Half

MILWAUKEE, July 2—Award of contracts for another five-story addition, 100 x 175 feet, to the plant of the Seaman Body Corp. recalls the fact that this is the diamond jubilee year of the concern. Seventy-five years ago A. D. Seaman established a small shop to make high grade carriages and fine furniture specialties. Later it became the W. H. Seaman Co., manufacturing enclosed bodies for electric and gasoline cars. With the acquisition of a half interest by Charles W. Nash, it became the Seaman Body Corp., and it is devoted entirely to building enclosed bodies for the Nash Motors Co. In 1922 the Seaman plant produced 9125 bodies for Nash; in 1923 the output was 19,388; in 1924, 27,040, and in 1925, 78,599, while in the first six months of the present year, 71,065 bodies have been built.

## Increase Janesville Output

JANESVILLE, WIS., July 2—By reaching and maintaining an output of 477 cars a day, the Janesville division of Chevrolet has just established a new high production mark, and every effort is being made to reach 500 or more without delay to meet dealer requirements in this territory. Driveaways from the factory are averaging nearly 150 cars a day, the remainder going forward by freight. The Fisher body plant operated in conjunction with the Janesville plant is being enlarged, and its completion will assist in making a capacity of 550 daily.

## I. H. C. Truck Output Steady

SPRINGFIELD, OHIO, July 5—The Springfield works of the International Harvester Co. is keeping up with its production schedule, it is announced. Indications are that the works will be busy all summer.

## See Turn for Better in Tire Industry

Orders for Replacements Show  
Decided Spurt as Warm  
Weather Starts Touring

AKRON, July 3—Akron tire plants are steadily increasing production of automobile tires, after operating on reduced schedules during the week preceding the Independence Day holiday. Orders from retail dealers have shown a decided spurt, and original equipment business from the motor car manufacturers is holding up well. Warmer weather within the past few weeks has greatly stimulated sales.

The worst is over in the tire industry, in the opinion of authorities here, and from now on practically everyone is looking for better business. One factor helping the situation is the apparent stabilization of the crude rubber market around normal levels.

Present rubber prices, it is pointed out, allow more than satisfactory profits for the growers, and at the same time permit the tire manufacturers to make tires at a fair profit.

## General Retail Business Shows Early Year Gains

WASHINGTON, July 6—General retail conditions throughout the United States, as reflected from reports compiled by the member banks of the Federal Reserve Board, show that business in the five months ending May 30 exceeded all previous records for volume for the corresponding period of any previous year.

General stock turnover was 6 per cent more in May, 1926, than in May, 1925, the figures show. Department store sales averaged 7 per cent larger for the country as a whole than in May of last year. Reports from 33 of the largest department stores show increased sales, while 12 showed a decrease.

## Car Output Gains 10 Points

WASHINGTON, July 1—Automobile production in the United States in May, compared with May of a year ago shows a 10 point index number advance, being 264 in May, 1926, against 254 in May, 1925, according to monthly survey of current business of various manufacturing industries by the Department of Commerce.

Using 100 as an index number in 1919, the survey shows that automobile manufacturers are producing at the present time more than two and a half times as many automobiles as they did seven years ago.

## Fyrac Opens Branches

ROCKFORD, ILL., July 3—The Fyrac division of the National Lock Co. is opening up branch offices in Columbus, Cleveland, St. Louis and Detroit. Fyrac division was formerly Fyrac Mfg. Co.

## War Plane Exports Hold Unit Value Low

WASHINGTON, July 2—Exports of aircraft from the United States during May totaled 40 and equaled about one-half of the total number shipped from this country during the entire year of 1925, figures of the Department of Commerce show. One of the odd features of the May exports is that the average unit value was \$246, being considerably lower than the lowest priced automobile. This low average is explained by the Department by the fact that surplus war stocks of training planes are still finding markets abroad.

May exports of aircraft engines totaled \$192,856, compared with \$160,000 exports in April. The average unit value of the May export was approximately \$2350.

## Safe Flying Fund Aim

NEW YORK, July 3—The Daniel Guggenheim Fund for the promotion of aeronautics will be used primarily to promote the securing of safety in flying according to an announcement made by the Board of Trustees. According to this announcement an "Open International Aircraft Competition" will be held for the purpose of which \$150,000 to \$200,000 will be appropriated by the fund.

## Plan Miami Truck Plant

MIAMI, FLA., July 2—The Fulton Motor Corp. of Miami, is constructing a plant for the manufacture of automobile trucks for distribution in the Florida and adjacent southeastern territory, it is announced by A. L. Jones, president of the company. Work on the plant is already under way, and it will probably be in production during the present summer.

## Coming Feature Issue of Chilton Class Journal Publication

Sept. 30—Automotive Industries  
Annual Production Issue

## Star Rubber Introduces New "Starco" Tire Line

AKRON, July 3—Announcement has been made by the Star Rubber Co. Inc., of an entirely new line of tires, known as the "Starco." These have already been placed in production to augment the company's regular wild rubber frictioned line of tires.

The Starco line is complete, being furnished in all the more popular sizes. This addition gives to Star dealers an opportunity to compete with other low priced tires upon a quality basis.

The reception accorded the new line has been highly satisfactory, according to officials, and the Star factory is working at maximum capacity to fill orders. The 29 x 4.40 size fits either drop center or regular rim.

## Luxor Plant to Continue

NEW YORK, July 2—Manufacturing operations of the Luxor Cab Mfg. Corp. will be continued under the receivers in equity appointed yesterday by Judge John Hazel in the United States District Court here.

The plant is at Birmingham, Mass. The company has assets of \$1,000,000 but the liquid capital has been tied up in financing sales. Budd Wheel Co. of Philadelphia brought the equity suit on a claim for \$4582. Myer Nussbaum and Reginald P. Boyd are the receivers.

## Customs Modified on Magneto Imports

WASHINGTON, July 2—A modification of customs regulations in importation of Bosch magnetos was announced this week by the Treasury Department, permitting the entry of such magnetos with style lot numbers for identification instead of the usual separate serial numbers. The Department's announcement is as follows:

Application has been made for the acceptance of identification of imported Bosch magnetos, when used in the manufacture of automobiles, by serial lot numbers instead of by serial numbers for each imported magneto. Investigation shows that the same value is applicable to one style designation of imported magnetos unless imported without adjusting attachment, and the invoice shows in each instance the condition of the imported magneto and the resultant difference in value. Under instructions from the manufacturers, future importations will show a separate lot number for magnetos of the same style designation imported without attachments.

With this understanding the Department authorizes the acceptance of style lot numbers for Bosch magnetos used in the manufacture of exported automobiles or automobile parts, in lieu of the separate serial numbers heretofore required. Drawback regulations which specify that identification shall be by serial numbers are modified accordingly.

## Gotfredson Sales Gain

WALKERVILLE, ONT., July 3—Gotfredson Corp., Ltd., reports sales of \$800,000 for the first four months of 1926, an increase of 40 per cent over the corresponding period of 1925.

# Calendar of Coming Events

## SHOWS

Batavia, Java ..... July 31-Aug. 6  
Exhibition, Botanical and Zoological  
Garden at Weltevreden.  
Brussels ..... Dec.  
Buenos Aires ..... Dec. 7-20  
Ninth Argentine Automobile Show,  
Palermo Park.  
Chicago ..... Sept. 20-24  
National Steel and Mechanical Tool  
Exposition, Municipal Pier, American  
Society for Steel Treating.  
Chicago ..... Nov. 8-13  
Coliseum, Automotive Equipment As-  
sociation.  
Chicago ..... Nov. 15-19  
Hotel Sherman, National Standard  
Parts Association.  
Chicago ..... Jan. 29-Feb. 5  
National, Coliseum, National Auto-  
mobile Chamber of Commerce.  
Cleveland ..... Oct. 4-8  
Public Auditorium and Annex, Amer-  
ican Electric Railway Association.  
Lima ..... July 28  
First Peruvian Automobile Show,  
Peruvian Touring Club.  
London ..... Oct. 4-9  
Olympia Motor Cycle.  
London ..... Oct. 21-30

Milan ..... Sept. 1-20  
Exposition.  
Milan ..... Sept. 6-13  
Fifth International Road Congress.  
New Haven ..... Sept. 7-10  
Machine Tool Exhibition.  
New York City ..... Sept. 13-18  
Madison Square Garden, Radio Man-  
ufacturers Show Association.  
New York ..... Jan. 8-15  
National, Grand Central Palace, Na-  
tional Automobile Chamber of Com-  
merce.  
Paris ..... Oct. 7-17  
Auto Salon, Grand Palais.  
Paris ..... Dec. 3-19  
International Aeronautic Exposition,  
Grand Palais.  
Prague ..... Sept.

## CONVENTIONS

American Electric Railway Association,  
Public Auditorium and Annex, Cleve-  
land ..... Oct. 4-8  
American Society for Steel Treating,  
Municipal Pier, Chicago ..... Sept. 20-24  
Associated Manufacturers of Fabric  
Auto Equipment, Inc., La Salle  
Hotel, Chicago ..... Nov. 13  
Automotive Equipment Association, Coli-  
seum, Chicago ..... Nov. 8-13

National Association of Automobile Show  
and Association Managers, Drake  
Hotel, Chicago ..... July 27-28  
National Standard Parts Association,  
Hotel Sherman, Chicago ..... Nov. 15-19  
National Tire Dealers Association, Inc.,  
Memphis, Tenn. .... Nov. 16-18

## S. A. E. MEETINGS

### National

Boston, Nov. 16-18, National Transportation  
and Service.  
Chicago, Sept. 21-23, Production Engineer-  
ing, Hotel Sherman.  
Philadelphia, Sept. 2-3, Aeronautical.

## RACES

Altoona ..... Sept. 6  
Atlantic City ..... July 17  
Atlantic City ..... Sept. 25  
Charlotte, N. C. .... Aug. 23  
Dallas, Texas ..... Nov. 11  
Laurel, Md. .... Oct. 23  
Los Angeles ..... Nov. 25  
Salem, N. H. .... Oct. 13